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What Agricultural Policy Would Best Serve the Economic Interests of the United States?

National Debate Topic for High Schools
1986-1987

Pursuant to Public Law 88-246

Compiled by the Congressional Research Service
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PUBLIC LAW 88-246, 88TH CONGRESS, S. 2311,
DECEMBER 30, 1963

AN ACT To provide for the preparation and printing of compilation of materials relating to annual national high school and college debate topics.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Librarian of Congress is authorized and directed to prepare compilations of pertinent excerpts, bibliographical references, and other appropriate materials relating to (1) the subject selected annually by the National University Extension Association as the national high school debate topics and (2) the subject selected annually by the American Speech Association as the national college debate topic. In preparing such compilations the Librarian shall include materials which in his judgment are representative of, and give equal emphasis to, the opposing points of view on the respective topics.

Sec. 2. The compilations on the high school debate topics shall be printed as Senate documents and the compilations on the college debate topics shall be printed as House documents, the cost of which shall be charged to the congressional allotment for printing and binding. Additional copies of such documents may be printed in such quantities and distributed in such manner as the Joint Committee on Printing directs.

Approved December 30, 1963.

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FOREWORD

The 1986-1987 high school debate topic is, "What agricultural policy would best serve the economic interests of the United States?" The three official debate propositions within this topic are:

> RESOLVED: That the Federal Government should adopt an export program to significantly expand foreign markets for United States agricultural products.
>
> RESOLVED: That the Federal Government should guarantee an annual cash income to farmers in the United States.
>
> RESOLVED: That the Federal Government should implement a comprehensive long-term agricultural policy in the United States.

In compliance with Public Law 88-246, the Congressional Research Service of the Library of Congress prepared this compilation of materials and bibliographic references to assist high school debaters in researching the topic. Excerpts from periodicals and other documents were selected to provide background information, an overview of the principal issues, and a balance of opposing views. We purposely included materials that are not readily available in public or research libraries. In selecting items for this reader and bibliography, the Congressional Research Service (CRS) has attempted to sample the wide spectrum of opinions reflected in current literature on these questions. No preference for any policy is indicated by the selection or positioning of articles herein, nor should one infer CRS disapproval of any policy or article not included.

The selected items have been arranged in four sections. The first section presents background materials which can help debaters educate themselves on key aspects of agricultural policy issues. Items in the other three sections were chosen for their relevance to the three official debate resolutions. The topics of forestry, fisheries, and grazing, which traditionally have been considered distinct from agriculture by public policy analysts, are not addressed in this manual.

A research guide is included at the end of this volume; it is intended to help debaters identify further references and organizational resources on their own. Also included is a list of relevant publications that are available for purchase from the Superintendent of Documents, Government Printing Office. Some of the U.S. Government documents listed in the manual may be found in U.S. Government depository libraries, which can be identified by local public libraries. The Library of Congress cannot distribute copies of these or other materials to debaters.

The documents included in this compilation were selected by Rebecca Mazur, Senior Bibliographer, Library Services Division, with assistance from A. Barry Carr, Specialist in Agricultural Policy, Environment and Natural Resources Policy Division. In addition, many other CRS analysts provided recommendations on the selections. Ms. Mazur prepared the guide to information sources in agricultural policy. Technical production was made possible by Ann Eschete, Sherry Shapiro, C. Lee Burwasser, Barbara Sanders, and John White, all of Library Services Division.

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Good luck to each debater in researching, preparing, and presenting arguments on this year's topic.

Joseph E. Ross
Director, Congressional Research Service

I. BACKGROUND MATERIALS

THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

1

FS1

The Farm and Food System

Major Characteristics and Trends

Alden C. Manchester
Economic Research Service, U.S. Department of Agriculture

THE FARM AND FOOD SYSTEM is one of the largest sectors in the U.S. economy. Centering on farming, it reaches backward through a chain of farm supply stores, tractor dealers, and fertilizer distributors to farm input manufacturing plants and phosphate mines. Extending forward through the chain are all the activities that move food and fiber from the farm to the dinner table or the clothes closet. On the food side, processing, transportation, and distribution are major parts of the system and all of these activities require inputs from other sectors of the economy ranging from tin cans to paper bags to salt. On the fiber side are all the activities which link the cotton boll or the sheep's fleece to the fabric, clothing, or other material we buy.

The farm and food system is defined and measured in relation to the activities of U.S. farms. But in order to put food on the table and clothes on our backs, the system requires many more nonfarmers than it does farmers. Farmers and their hired workers are only 13 percent of all the people in the food and fiber system, and farming contributes only 11 percent of the value of these products (Table 1).

Many different industries provide inputs both to farming and to the processing and distribution of farm products. Phosphate miners in Florida and elsewhere provide one essential fertilizer ingredient. Other mines provide the ores which become metals that are made into farm machinery, the cans that hold many foods, and many other articles used throughout the farm and food system. The timber industry provides wood which goes into farm buildings, grocery sacks, and cardboard cartons. The government also provides resources such as grazing land, irrigation water, and services such as flood control.

Many firms supply specialized services to farmers. These include pesticide applicators, combine operators who harvest grains for farmers, and many others. Other services supplied to firms at all levels in the farm and food system include financial services from banks and other financial institutions, insurance, and many others.

The manufacturers of all of the inputs to farming, processing, and distributing agricultural products — ranging from fertilizer and pesticides to salt and tin cans — form a major component of the farm and food system. They contribute 8 percent of the value of farm and food products and employ 7 percent of the workers in the system.

Table 1 — Industries contributing to the farm and food system, 1982.

Industry	*Contribution to gross national product*		*Workers (full-time equivalent)*	
	Billion dollars	*Percent*[1]	*Thousand*	*Percent*
Farming	71.1	11.3	3,010	12.5
Inputs to farming, processing, and distribution:				
Mining	7.9	1.3	103	.4
Forestry, fishing, and agricultural services	6.3	1.0	294	1.2
Manufacturing	50.4	8.0	1,555	6.5
Services	113.1	18.1	2,175	9.0
Total inputs	177.7	28.4	4,127	17.1
Manufacturing:				
Food	74.1	11.8	1,786	7.4
Textiles	46.8	7.5	2,791	11.6
Leather	6.6	1.0	861	3.6
Tobacco	8.1	1.3	63	.3
Distribution:				
Transportation	30.1	4.8	804	3.3
Wholesaling and retailing	169.8	27.1	7,314	30.3
Food service	42.6	6.8	3,356	13.9
Total manufacturing and distribution	378.1	60.3	16,975	70.4
Total farm and food system	626.9	100.0	24,112	100.0

NOTE: *The farm and food system as measured here includes manmade fibers, leather substitutes, and fish.*

[1] *Percent of the total contributions of the farm and food system to the gross national product.*

Larry G. Hamm, Michigan State University, and Harold Guither, University of Illinois, contributed reviews of the paper. This is one of a larger set of resource papers sponsored by the Extension Committee on Policy (ECOP), USDA-Extension, Michigan Extension Service, and the various universities and organizations that supported those who have contributed papers and reviews.

Taken from the series, "The Farm and Food System in Transition," a Cooperative Extension Project.

Most, but not all, food is processed. Food processing contributes 12 percent of the total of the system's output and employs 7 percent of the workers. The manufacturing of textile products, leather products, and tobacco products adds another 10 percent to the output of the system and employs 16 percent of the workers. Distribution of farm products contributes 39 percent of the value of these products and accounts for nearly half of the workers.

The Industrialization of the U.S. Economy

Since early in the last century, the U.S. economy, including the farm and food system, has been industrializing. Until the Industrial Revolution, the U.S. economy — like those of all countries — was mainly agricultural. In 1810, 84 percent of the labor force was in agriculture, and these workers produced 72 percent of the gross national product (Fig. 1). The industrialization of the economy consisted of a series of "revolutions," beginning with the mechanical revolution which led to widespread adoption of the factory system. The next revolution occurred in power sources. From dependence on man and animal power and especially on water power, the dramatic shift to coal, then petroleum, and later to electricity and gas made possible dramatic changes in production and transportation technology. In 1850, 6 percent of power in the economy came from water power and mineral fuels, 79 percent from work animals, and 15 percent from human workers. By 1940, 90 percent of all power came from mineral fuels and water power, 6 percent from animals, and 4 percent from manpower.

Concurrently in part with developments in power sources, the revolution in materials used in the food system also made major impacts on it. The first changes occurred in metallurgy, then came changes in chemicals, and more recently in electronics and nuclear energy. All of these developments dramatically changed the technologies of production, transportation, communication, and computation.

An equally significant change took place in business organization. Up to the middle of the 19th century almost all businesses were single-unit enterprises, with one individual or a small number of partners operating a store, factory, shop, or transportation line from a single office. These firms performed a single economic function, producing a single line of products or trading at one level. Modern business firms began to emerge in the last half of the 19th century when it became necessary and profitable to combine the operations of several previously separate units under a centralized management. The process of industrialization took place in all sectors of the economy — farming, manufacturing, transportation, and distribution. This process is still going on. Its latest manifestation is the deluge of computers in all kinds of businesses — even small businesses, such as farms.

The economy of the newly independent United States was mostly agricultural, as it had been throughout the colonial period. Farm output was very largely food and most of it was consumed on the farms where it was produced. The only important nonfood crop was tobacco, which had been grown by the Indians before the first settlers arrived in Jamestown in 1607 and which rapidly became the basis for the plantation economy of Virginia, Maryland, and the Carolinas. In 1793, the invention of the cotton gin made cotton a cheap fiber. Production boomed in the South where cotton became the major crop. The new technology used in the English cotton mills and soon

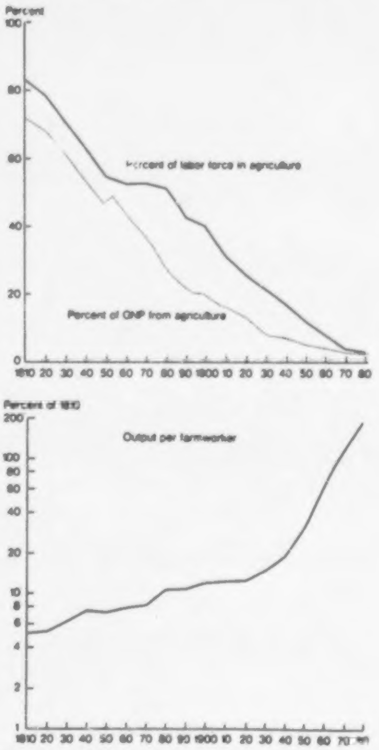

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Fig. 1 — The Industrialization of Farming.

adopted in the mills of New England made cotton the basic fiber for more than a century, until cheaper man-made fibers were introduced in the 1920's.

Output per farm worker doubled between 1810 and 1880 and again between 1880 and the early years of World War II. Since 1950, it has increased nearly sixfold. This increase in productivity resulted from many factors, including the territorial expansion of the nation's agriculture to the more productive lands of the midwest, shifts among crops, and major changes in the technology of farming.

Rising output per worker made possible increases in total output to meet the needs of a rapidly growing population by using a declining share of the total work force in farming. The share of the labor force in farming declined from 84 percent in 1810 to 50 percent in the early 1880's. By 1900 it was down to 40 percent and it is now about 3 percent of the total work force.

The Shift of Work from Farm Firms to Nonfarm Firms

Much of the work and many of the functions formerly performed on farms have shifted to nonfarm firms. The most dramatic shift is probably in power inputs. Up until 1910, almost all of the power on farms was supplied by men or animals. Over the next fifty years, the introduction of petroleum-powered machines, and later electrically powered machines, brought about nearly a total replacement of horses and mules. Nowadays, practically the only work horses left are on farms operated by the Amish who refuse to use mechanical power for religious reasons. Horses are now used almost entirely for recreation. The soaring fuel prices of the seventies brought a revival of interest in horsepower but almost entirely on small farms. The virtual disappearance of horses and mules from American farms freed up 90 million acres — about a quarter of all cropland — which had been used to produce the feed for them. These acres could then be used for producing human food. It also freed up 8 percent of total farm labor man-hours which had been used in caring for horses and mules.

Feed, seed, and livestock still come from farms and are used on farms. But much more is now produced on one farm and used on another, increasingly passing through the hands of nonfarm firms on the way. More and more feed is mixed by commercial feed processors rather than on the farm where it was grown or used. Most seed is produced by or for seed companies under careful quality control. The entire cattle feedlot business was built on the separation of cattle raising from cattle feeding.

All of these changes mean that much more of the inputs which farmers use are now purchased rather than produced on the farm itself. Between 1910-14 and 1980, total inputs used in farming increased 19 percent. Those purchased by farmers increased 224 percent, while non-purchased inputs — operator and family labor and inputs from land, buildings, and machinery — decreased 48 percent.

Intensive use of purchased inputs has increased farmers' vulnerability to rising prices and interruptions of input supplies. Prime examples include the rapid oil price increases and supply shortages of 1974 and 1979 and the recent run-up in real interest rates (interest rates higher than inflation). Between 1972 and 1982, input prices increased an average of 140 percent while prices received by farmers rose an average of 90 percent, resulting in a cost-price squeeze.

The use of borrowed capital has been increasing through most of the postwar period. As a percent of assets, it was twice as large in 1982 as it was in 1945 and 1950. Interest payments were 11.8 percent of gross farm income in 1981, compared with 4.2 percent in 1940 and an average of 7.2 percent between 1910 and 1934.

As a result of all of the changes in farming, productivity of all of the inputs into farming increased 180 percent in the last 110 years (Fig. 2). There was a 20 percent increase in the 1870's and then no clear cut trend until the late thirties. Major increases occurred during and after World War II.

From Self-Sufficiency to Specialization and Interdependence

The industrialization of the economy transformed farming from an enterprise approaching self-

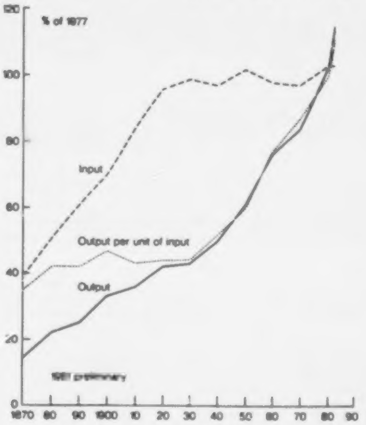


Fig. 2 — Farm Productivity.

sufficiency to the specialized, interdependent system of today. The transformation was already well underway by 1869 when 23 percent of the farm output of food products was consumed on the farm where it was produced. The share of home consumption declined irregularly and fairly slowly until after World War II, when it dropped sharply to less than 1 percent. In terms of total expenditures for food, nearly a third was home-produced by farm and nonfarm families in 1869. The proportion was about halved by 1939 and it is now only about 4 percent of total food expenditures.

The number of farms in the United States peaked during the Great Depression and it has been declining ever since, but the rate has slowed (Fig. 3). The biggest share of the decline, from 7 million farms in 1935 to 2.4 million today, was in part-time and subsistence farms. While the number of commercial farms has declined, that drop is not nearly as sharp. The most important factor bringing about larger farms and increased specialization in farming is the dramatic change in the technology of farming. Also, the technology adopted in farming has shifted the cost curve toward larger sizes of farms. Between 1930 and 1970, the farm size which achieved minimum cost increased about 500 percent for wheat farms. The farmer increasingly devotes his attention and resources to one enterprise so he can make use of the technology available and reduce his costs. He drops other on-farm sideline enterprises.

The increase in size and specialization of farms has not meant that large nonfarm firms are taking over the ownership and operation of American farms. In 1974, 3.4 percent of agricultural products sold came from farms owned by business-associated corporate firms. These farms were important only in specialized crops such as sugarcane and seed, and to some extent in poultry and beef.

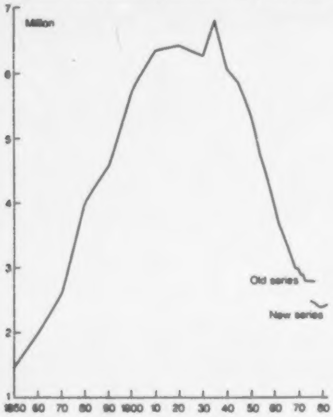


Fig. 3 — Number of Farms.

Changes in Processing and Distribution

The share of processed foods (omitting those which are home-produced) has changed relatively little in more than a century — 87 percent of purchased foods were manufactured in 1869, 83 percent in 1909, and 90 percent in 1980. But the sorts of foods processed and the nature of the food manufacturing industry have changed dramatically. In 1869, flour and cornmeal accounted for 52 percent of processed consumer food products and cured meats, dairy products and sugar for another 37 percent. By 1978, flour and other grain products accounted for 3 percent, but bakery products accounted for 9 percent. Meat and poultry accounted for 29 percent, processed fruits and vegetables 15 percent, and soft drinks 8 percent. Many new industries appeared and grew to considerable size during that period, mostly as a result of new technologies, e.g., frozen foods, dehydrated foods, soft drinks, and fresh meat.

Food and textile manufacturing started out as small-scale businesses. The first big firms in food manufacturing were in meat packing, sugar refining, and in oils. Only cigarette manufacturing started as a business of a few firms which rapidly became large. Today, agricultural processing and distribution are characterized by large-scale corporations. The 100 largest food and tobacco processing companies accounted for 52.5 percent of U.S. shipments of food and tobacco products in 1975. Another 100 companies accounted for an additional 11 percent. These 200 companies are broadly diversified. U.S. sales of processed foods, alcoholic beverages, and tobacco made up only 52 percent of their business. Nonfood firms have been diversifying into food and beverages. The share of nonfood firms rose from 1 to 12 percent over 25 years.

U.S. food manufacturers produce either consumer products or the intermediate products used in their manufacture. Consumer food products are largely branded — the manufacturers use a brand name that is widely advertised. Many now have well-known brands that differentiate them from others. As manufacturers seek to maintain or improve their own positions in the marketplace, they engage in a continual process of new product development and promotion. Constant attention to product development and differentiation provides a food manufacturer with a partially protected place in the market and with somewhat higher returns.

Wholesaling bridges the gap between processors and retailers. Not all wholesaling is carried out by independent wholesale firms. Very early on, meatpackers established their own networks of branch houses in markets throughout the country. They played a dominant role in meat wholesaling 50 years ago but they are now much less important. For supermarket operators of any size, direct buying from meat packers has largely replaced the branch house business.

As a number of retail chainstore organizations grew large 50 years ago, they undertook their own distribution (wholesaling) of dry groceries and of some perishable products. Then, as now, smaller chains and independent grocery stores depended on wholesalers for their supplies. During the postwar period, the chain share of grocery store sales increased from 34 percent to 59 percent (Table 2), but the share of chains large enough to operate their own distribution centers (warehouses) increased less rapidly. This is partly due to the growth of convenience store chains, only one of which is large enough to operate its own distribution centers.

Table 2 — Chain shares of grocery store sales.

Type of chain	*1948*	*1958*	*1967*	*1977*
	- - - - - - - - Percent - - - - - - - -			
Supermarket chains with distribution centers:				
National	18.6	19.7	16.2	14.7
Regional	3.9	8.2	8.5	9.9
Sectional	3.1	4.3	6.6	10.9
Local			1.6	1.3
Owned by grocery wholesalers	4.5	9.0	13.4	10.1
Total	30.1	41.2	46.3	46.9
Other chains	4.3	2.8	5.1	12.0
All chains	34.4	44.0	51.4	58.9

About 675 large general-line wholesalers serve independent supermarket operators and small chains which often compete with vertically integrated supermarket chains. These wholesalers either franchise the supermarkets they serve or are cooperatively owned by them. They furnish numerous managerial, recordkeeping, and financial services to the supermarkets, in addition to a wide array of food and nonfood products. Today, virtually all independent supermarkets and many chains are affiliated with one of these wholesalers.

Two-thirds of food for use at home now comes from the supermarket — up sharply from 37 percent in 1958 (Table 3). Convenience stores account for 4 percent and other grocery stores 11 percent.

The away-from-home market has been growing rapidly in recent years, primarily because of the growth in sales of fast food establishments, which now account for 32 percent of eating-out dollars, compared with 5 percent in 1958 (Table 4). Sales of conventional restaurants, lunchrooms, and cafeterias are down from 54 percent in 1958 to 38 percent now. In dollar terms, the share of away-from-home eating has more than doubled in the last 50 years.

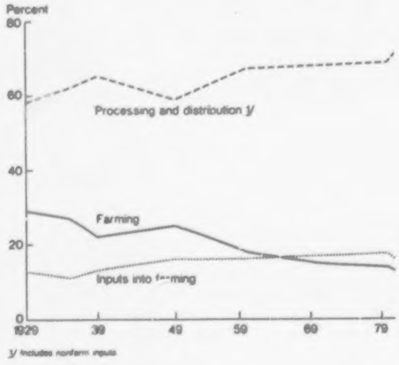
Table 3 — Sales of food for home use.

Type of seller	*1939*	*1958*	*1981*
	- - - - Percent - - - -		
Supermarkets	5.8	36.5	66.9
Convenience stores	0	.1	4.3
Other grocery stores	52.4	37.0	11.3
Other food stores	14.1	11.2	9.2
Other stores	7.7	4.7	5.7
Home delivered	14.9	7.3	.7
Farmers, processors, wholesalers, other	5.1	3.2	1.9

Table 4 — Shares of away-from-home food market sales.

Type of seller	*1939*	*1958*	*1981*
	- - - - Percent - - - -		
Restaurants, lunchrooms, cafeterias	46.6	53.5	38.0
Fast food places	7.1	5.4	31.6
Hotels and motels	10.8	6.1	6.1
Schools and colleges	6.8	12.0	10.6
Stores, bars, direct selling	21.1	14.7	7.3
Recreational places	1.9	2.4	2.5
Others	6.7	5.9	3.9

All of these changes in the food system and many others mean that farming accounts for less than half as large a share of the total value of U.S. farm foods as in 1929 (Fig. 4). The share of inputs into farming



1/ Includes nonfarm inputs.

Fig. 4 — Share of Consumer Expenditures for U.S. Farm Food.

increased from 11-12 percent in the early thirties to 16-17 percent in the eighties, while processing and distribution rose from 58 percent of the value of food in 1929 to 71 percent in 1981.

Changes in Demand

The industrialization of the economy has meant not only great changes in the ability of the farm and food system to supply agricultural products to consumers at home and abroad, but also major changes in the demand for these products. As real incomes rose, there was some increase in the demand for agricultural products but most of the added incomes were spent for other products and services. In 1869, 71 percent of consumers' incomes were spent for products originating on U.S. farms, while in 1981 only 18 percent went for such products (Fig. 5). The rapid industrialization of the economy reduced the share of farm-origin products to 45 percent by the turn of the century and to a third by 1950.

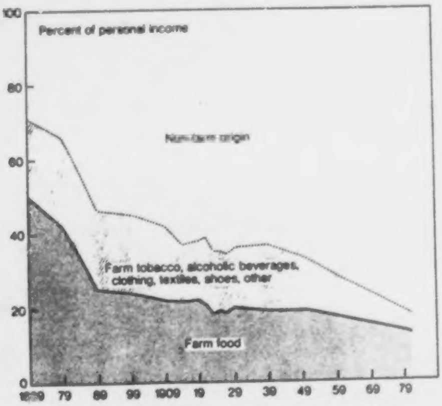


Fig. 5 — Consumer Expenditures for Products of Farm and Nonfarm Origin.

There have been major changes in the demand for particular foods, partly as a result of the decline in home food production but mostly in response to higher real incomes and changing forms of food products (Table 5). Total consumption per person of foods other than beverages (coffee, tea, and soft drinks) has changed only modestly since 1910. But consumption of grain products dropped by more than half, while fats and oils more than doubled. Consumption of meat, poultry, and fish and of sweeteners is up sharply but consumption of dairy products and eggs rose and then fell. Beverage consumption is up more than 90 percent from 1910.

Table 5 — Per capita food consumption[1]

Product	*1910*	*1950*	*1980*
		- - - - Pounds - - - -	
Meat, poultry, fish	137	145	179
Dairy products	325	455	344
Fruits and vegetables	466	426	446
Eggs	34	44	31
Grain products	297	166	151
Sweeteners	89	117	126
Fats and oils	24	39	53
Nuts, cocoa, herbs and spices	5	12	14
Subtotal	1,377	1,404	1,344
Beverages (coffee, tea, and soft drinks)	276	453	536
Total	1,653	1,857	1,880

[1] *Edible weight, resident population (civilian and military).*

World Markets

Foreign demand for U.S. crops rose sharply after 1973, greatly increasing the role of agricultural exports in the U.S. economy and the stake of the crop farmer in foreign markets (Fig. 6). Rapid growth in food imports by the less developed nations and the centrally planned countries of Eastern Europe and the U.S.S.R. greatly enlarged U.S. markets for grains.

The United States is the leading exporter of agricultural products, dominating trade in temperate-zone crops. The U.S. now accounts for nearly half of world grain trade, compared with 31 percent in 1951-55. More than half of U.S. production of wheat, rice, corn, and cotton was exported in 1980 and nearly half of the soybeans.

The importance of exports to U.S. crop farmers is not a new thing. In 1850, 90 percent of all cotton was exported. Half of U.S. cotton was exported until the Depression, declining to about 20 percent in the early sixties, and then rebounding.

Nearly all tobacco was exported in the early days, with the share declining until the Depression and then rising again in the late sixties and seventies.

U.S. exports consist mostly of crops and their products. Only about 4 percent of livestock products are exported. Booming exports of feed grains and oilseeds are an obvious benefit to their producers. As specialization in livestock production increases, producers of livestock must compete with livestock producers around the world and the prices they must pay for feed rise.

In the twenties and thirties, more than half of exports were raw materials such as cotton, tobacco, hides, and tallow. Since 1950, the big increase has been in feed products, largely corn and soybean meal (Fig. 6).

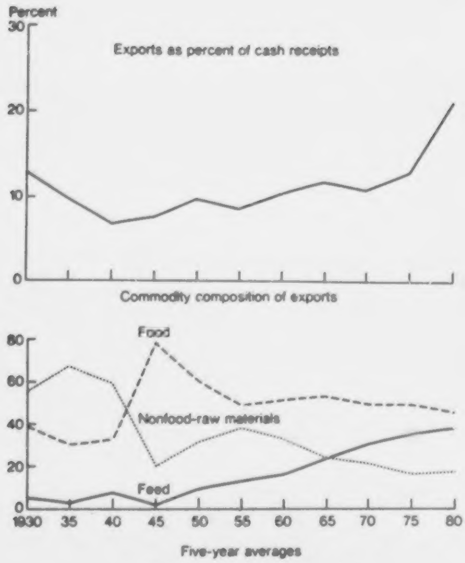


Fig. 6 — Agricultural Exports.

Agriculture's contribution to the balance of trade with the rest of the world has been substantial and increasing. In 1980 and 1981, the agricultural trade balance offset nearly half of the deficit in non-agricultural trade.

The Increasing Complexity of Coordinating Supply and Demand

The role of markets in coordinating production and marketing of farm inputs and farm products has changed greatly over the years as the changes in production and marketing took place. But markets for farm products have far from disappeared.

Markets for farm inputs are obviously more important than they used to be because so many more farm inputs are now purchased rather than produced on the farm. Changes in the organization of both the farm and marketing sectors have altered relationships between them. Direct links between farmers and marketers through contracts or ownership have become much more common.

Relatively cheap transport by truck made it possible for farmers to go farther to market and for processors to reach out farther for supplies, facilitating growth in the size of both farming and processing. Larger buyers, both processors and distributors, reached out to buy directly from the growing number of larger farmers. This brought a decline in terminal markets and a change in their roles.

As buying and selling arrangements changed, pricing systems have adapted. As the central markets diminished, formula pricing, which uses a base price from such a central market, became more important for some products. Determining a base price also became more difficult.

Large processors need a steady supply of particular products. Where there is little assurance of supplies, such firms have actively generated a reliable supply by entering into contracts with farmers or sometimes by acquiring direct ownership of production resources. In such cases, decisions formerly made in the marketplace are shifted to the firm. The extent of formal coordination through contracts or integration ranges from virtually 100 percent for sugar beets and sugarcane to less than 1 percent for hay and forage crops (Table 6).

Table 6 — Production or marketing contracts and vertical integration.

Products	*Production and marketing contracts*[1]			*Vertical integration*[2]		
	1960	*1970*	*1980*	*1960*	*1970*	*1980*
	Percent					
Crops	8.6	9.5	14.3	4.3	4.8	5.3
Feed grains	.1	.1	7.0	.4	.5	.5
Hay and forage	.3	.3	.5	0	0	0
Food grains	1.0	2.0	8.0	.3	.5	.5
Vegetables for fresh market	20.0	21.0	18.0	25.0	30.0	35.0
Vegetables for processing	67.0	85.0	83.1	8.0	10.0	15.0
Dry beans and peas	35.0	1.0	2.0	1.0	1.0	1.0
Potatoes	40.0	45.0	60.0	30.0	25.0	35.0
Citrus fruits	60.0	55.0	65.0	20.0	30.0	35.0
Other fruits and nuts	20.0	20.0	35.0	15.0	20.0	25.0
Sugar beets	98.0	98.0	98.0	2.0	2.0	2.0
Sugarcane	24.4	31.5	40.0	75.6	68.5	60.0
Other sweeteners	5.0	5.0	5.0	2.0	2.0	2.0
Cotton	5.0	11.0	17.0	3.0	1.0	1.0
Tobacco	2.0	2.0	2.0	2.0	2.0	2.0
Oil-bearing crops	1.0	1.0	10.0	.4	.5	.5
Seed crops	80.0	80.0	80.0	.3	.5	10.0
Other crops	5.0	5.0	5.0	1.0	1.0	1.0
Livestock	27.2	31.4	38.4	3.2	4.8	10.1
Fed cattle	10.0	18.0	10.0	3.0	4.0	6.0
Sheep and lambs	2.0	7.0	7.0	2.0	3.0	3.0
Hogs	.7	1.0	1.5	.7	1.0	1.5
Fluid grade milk	95.0	95.0	95.0	2.9	2.1	1.4
Manufacturing grade milk	25.0	25.0	25.0	2.0	1.0	1.0
Eggs	5.0	20.0	45.0	10.0	20.0	44.0
Broilers	93.0	90.0	89.0	5.4	7.0	10.0
Turkeys	30.0	42.0	62.0	4.0	12.0	28.0
Other	3.0	3.0	3.0	1.0	1.0	1.0
Total farm output	15.1	17.2	22.9	3.9	4.8	7.4

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[1] *Vertical coordination of farm production and marketing under agreements between farmers and processors, dealers, or others including cooperatives.*

[2] *Production and marketing by the same firm.*

Variety Within

The variety within the farm and food system must be emphasized. The lettuce business is different from the wheat business in many more ways than it is similar. The broiler subsector is very different from beef and dairy; cotton is unlike anything else. The differences arise out of the biological characteristics of production and of the products produced, the technology available, the risks involved in production and marketing, capital investment required, and a host of other economic factors.

The Changing Government Role

The part that governments play in the farm and food system has changed drastically, as it has throughout the economy. Colonial agriculture was not free of government intervention. There was detailed regulation of farmers' markets in colonial towns, the establishment of legal tender, and the establishment of a system of legal rights and obligations which applied to agriculture as well as other forms of trade.

With the opening of the west, the federal government gradually moved to a system of subsidizing agriculture through the availability of cheap, and eventually nearly free, land. Agricultural research got its first big boost through the establishment of the Department of Agriculture and substantial federal assistance to State Agricultural Experiment Stations. By World War I, extension was a going activity, as were market news, grading services, and statistical reporting.

The agricultural depression of the twenties brought the first efforts to assist farmers with their income problems. The general depression of the thirties brought much more effort to assist farmers through commodity programs, credit, conservation, rural electrification, and many more. These programs are still changing as circumstances inside and outside of agriculture create the need.

Government also plays a bigger role in supporting food consumption today. Through food stamps, contributions to school lunches, feeding the military, and other programs, governments paid for 5 percent of all food in 1982, up from 2 percent 25 years earlier.

Future Prospects

The forces reflected in the trends that have been discussed are still at work and can be expected to continue, but the results are unlikely to appear as simple extensions of the trend lines shown in the figures. In most cases a slowing of the rate of change can be anticipated.

The farm and food system will continue to grow but at a slower rate than the national economy, reflecting:

- — slower growth in population.
- — slower substitution of man-made fiber for cotton.
- — increasing demand for nonfarm products as incomes rise.

The share of the labor force in the farm and food system will continue to decline, but at a slower rate, reflecting the factors above. The share of farm workers in the system will decline also but at a considerably slower rate because so many farm workers have already left agriculture.

Labor productivity will continue to rise with increased adoption of larger, more efficient machinery, although again the rate may slow. Incremental changes in overall productivity because of improved varieties and strains of crops and livestock can also be expected but dramatic breakthroughs such as, say, hybrid corn, are less likely.

Farming is now nearly completely integrated into the economy. Self-sufficiency is a thing of the past. How much further specialization will take place is more problematical.

Food processing and distribution likely will continue to take an increasing share of the food dollar as away-from-home eating expands further with affluence and the proportion of prepared foods increases modestly. Dramatic changes in retailing, on the order of the supermarket revolution, do not seem to be in store although many smaller changes will occur. Basic food processing has become less attractive to large corporations in the last 20 years and they are likely to turn over an increasing share of canning, freezing, meat packing, and milk processing to cooperatives and smaller firms in the next 20 years.

Export markets for grain, oilseeds, and cotton will continue to be major determinants of the profitability of farming. When droughts or policy changes on the part of governments boost exports sharply, U.S. prices will be good. The prospects of large commercial demand for U.S. food from the less-developed countries are less hopeful.

For many decades, American agriculture has had a tremendous capacity to produce more than the U.S. and world markets will take. Only occasionally has demand caught up with supply — usually in wartime. At the least, one should be extremely cautious in predicting a permanent change from surplus to deficit.

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THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

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What Forces Shape the Farm and Food System?

By B. F. Stanton
Cornell University

GO TO YOUR FAVORITE SUPERMARKET. Walk to the dairy section where the different kinds of cheese are displayed. Count the number of varieties in different types of packages, sliced and unsliced, with different brand names from different parts of this country and around the world. Why is it that you have cheese from Holland, Switzerland, Finland, France, Wisconsin, Virginia, New York, and Greece in a Washington, D.C., or Los Angeles supermarket? And why are there so many different packages of all different sizes? Isn't it terribly expensive? What can we expect 20 years from now?

The array of choices in the cheese case and the continuing evolution of the world's dairy industry reflect the sweeping forces that have shaped our modern, interdependent, smoothly functioning food system. Most of us take that system for granted. That is we take it for granted until there's a shortage of sugar or lettuce or the price of porterhouse steak reaches $8.00 a pound. Then we ask questions or protest.

This paper is intended to examine important forces that have helped to create this complex, interdependent farm and food system and are now bringing about still further change. It is a dynamic system. The effort here will be to understand some of the reasons why and how change is likely to occur in the future as it has in the past. When the pioneers settled the West 150 years ago, feeding one's family was a central part of daily life. Except for some basic tools and either horses or oxen for draft power, the requirements for food production originated on one's homestead. Processing, manufacturing, and distribution were centered in local communities. Surplus output was exchanged for coffee, tea, sugar, and spices. Much of what was consumed was produced locally.

The self-sufficient farm and food system of a frontier society would not seem to have much in common with the highly specialized, industrialized system of today. Nevertheless, while the technology and methods of production and processing have changed, the basic functions continue much as they have through the ages: (1) inputs for farm production must be supplied; (2) crops and livestock are then produced on farms; (3) farm products are processed and preserved; (4) assembly, wholesaling, and distribution occurs; (5) retailing of final products is provided; (6) food is prepared for consumption either in homes or for sale commercially. What has changed is the time and effort spent in performing these functions and the degree to which all of us rely on one another to obtain our daily food supply. If anything the changes in the farm and food system that occurred in the past 20 years were as numerous and dramatic as for any similar length of time in history. Yet most of these changes went almost unnoticed by the general public. Examples are:

1. Exports of American agricultural products grew to account for the production from 1/3 of all cropland harvested in the United States.
2. In 15 years meals eaten away from home doubled.
3. The 25,000 largest farm operations accounted for 30 percent of all agricultural sales in 1981.
4. In contrast, concentration in food retailing has stopped. The four leading chains accounted for 17.5 percent of sales in 1971 and although the leaders themselves had changed, they still accounted for 17.5 percent in 1981.

Several underlying forces have worked simultaneously over time to change and shape the United States farm and food system: (1) new technology and its applications in all segments of society, (2) the growth of markets and a public transportation system, and (3) an industrialized and service-oriented society of mobile, widely read individuals. Thus a combination of technology, education, and capital investment combined with relative political stability and active market forces have facilitated change and made our economic system work. Most of this change was led by people in a wonderfully open society compared to those in much of the rest of the world, a society where creativity is encouraged and incentives for productivity are fostered. Our food system is an integral part of an industrialized and service-oriented economy. Continuing development has been fostered

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by dynamic transportation and communication systems. At nearly every level in the farm and food system people have adopted new technology because it saved them time, or physical effort, or money, or because it produced a higher quality product or service that they wanted. Our systems evolve in large measure because there are built-in incentives for change. If those incentives disappear because some group gets too much power or if a bottleneck develops in the system, then productivity and efficiency may suffer. One reason for learning more about how our food system works is to ensure that an informed citizenry can express its views and influence change over time.

Key Elements in System Dynamics

An incredibly complex set of conflicting currents and forces have interacted to bring about our modern, industrialized farm and food system. Capturing a full sense of the dynamics of the system is impossible. A discussion of some of the important elements that are constantly at work both within and outside the system may provide some insight into the changes one observes and can expect in the future. Following are ten of these elements:

1. *Consumer expectations, tastes, and preferences*
2. *Specialization by function and its consequences*
3. *The transportation system and product flows*
4. *Information processing and the computer age*
5. *Exchange, credit, and banking*
6. *International trade and the growth of markets*
7. *Concentration of power, bigness, and market shares*
8. *The role of government and regulation*
9. *Conservation of resources*
10. *Politics and the food system*

We will examine each of these elements in sequence, emphasizing recent changes in the system and what may occur in the future.

Consumer Expectations, Tastes, and Preferences

It is consumers that finally decide how much will be spent on food, which items to buy and when, and if they will change their buying habits. Americans eat only half as many potatoes and flour or cereal products as they did at the turn of the century. Fats of all forms make up a much larger share of the calories we consume than even 20 years ago. Vegetable oils have been rapidly substituted for animal fats. We eat more of our food supply away from our homes.

Changes in the variety of foods we eat, the amount of time spent in preparing meals, and the amount of food services we buy are all functions of the alternatives available to us and the amount of income we have to spend. The fast food industry has developed because the necessary technology was available and because our highly mobile society, with a large part of the adults working, could afford such a service. In the past three years, the proportion of total food budgets spent on food away from home has stabilized. This may be a sign that this potential change in demand has been exploited. Another shift may come.

While consumers do not develop the new packages, the highly processed foods, or the multiplicity of sizes and kinds of products on the market, they do make decisions on what they want to buy. They have many alternatives. If certain items don't sell they soon disappear from the shelves, replaced by products that will compete and earn a return on the investment for shelf space.

In the decade of the eighties we should expect further changes in consumer wants and preferences. The certain lesson from past history is that there will continue to be change. Consumers' decisions will send messages back through the food system at every level. The cheese case is fuller than it used to be because there is a demand for specialty cheeses, processed cheese, hard cheeses as well as for dips and

Table 1 — Per Capita Consumption, Selected Foods (United States, 1920-1980).

	Year					
Description	*1920*	*1940*	*1960*	*1970*	*1980*	*1990*
			Pounds per capita			(Estimates)
Beef, retail equiv.	47	43	64	84	77	(75)
Pork, retail equiv.	59	68	60	62	68	(65)
Chicken, ready to cook	14	14	28	40	50	(60)
Eggs, retail	36	39	43	39	35	(35)
All dairy products, milk equiv.	736	818	653	561	544	(530)
Vegetable oils and margarine	11	17	27	39	45	(50)
All fresh fruit, retail	130	138	89	79	86	(85)
Total fresh vegetables, retail	80	99	96	91	99	(100)
All potatoes, fresh and processed	130	114	87	74	77	(75)
Wheat flour, all forms	179	155	118	111	117	(120)
All sugars	104	112	114	127	138	(130)

Source: USDA Statistical Bulletin 364.

spreads. In the same manner consumers may have determined that consumption of red meat reached a peak in the United States in the 1970's and that per capita beef consumption has stabilized or started a downward trend. The marketing system must respond to consumer preferences and it will do so even though some producers and processors gain while others lose.

Some of the possible consumer-led shifts may include:

1. Greater interest and volume of sales through specialty food stores — fresh produce, meats, dairy, convenience stores
2. Some movement away from highly processed foods with heavy reliances on preservatives, sugar, and fats
3. Premiums and preference for locally produced, high quality products
4. Lower proportion of total food costs spent on packaging and some resistance to throwing so much away
5. Further expansion of self-service principles that have been so important in the expansion of supermarkets and fast food outlets

Whatever happens in the farm and food system in the future will result from the free choice of consumers exercising their buying power. The system, then, must both participate in this process and respond to it.

Specialization by Function and Its Consequences

When this country was settled, each household was a center where food was produced, processed, stored, and consumed. Every family learned how to perform all the necessary functions. If the garden was poor there were less vegetables for the table. Each family member might specialize in an activity, but there were no baked goods unless they came from an oven in the kitchen.

Technology, industry, and thrift have resulted in a highly specialized world in which the self-sufficiency of pioneer society has essentially disappeared. We may lament about lost virtues, but in fact, few individuals would be willing to go back to the good old days, even if they could. Specialization is the rule. Fertilizers and agricultural chemicals are produced in specialized plants, warehoused, and then distributed to farmers through an integrated, market-oriented system. Specialists perform every transaction from the formulation and testing of original products by chemists and agricultural experimentalists to the manufacture, packaging, transportation, and sales of the final product to the individual farmer. Repeat that process thousands of times for each of the sectors in the food industry and you get a small glimpse of the intricate maze of decisions and events that provides us with orange juice, scrambled eggs, toast, and coffee for breakfast every day.

The reasons for all this specialization are tied to productivity and efficiency. It takes less time and resources for a bakery to produce thousands of loaves of bread than for every homemaker to bake her own. Many families end up with a better product to eat in addition. The gains from specialization are as evident in the food industry as everywhere else in an industrialized society. Nevertheless, the results are far from uniform. Fresh strawberries, fresh apples, and peaches are picked by hand. Corn, wheat, potatoes, and peanuts are harvested by highly mechanized operations. A perishable, hand harvested fruit requires specialized containers and equipment for shipping and distribution. This equipment is much different from that used for thick-skinned, less perishable grapefruit and oranges. Thus fresh strawberries are increasingly grown close to consumers. U-Pick operations have increased to reduce harvest costs. Direct marketing has become more and more important. In contrast, orange production is concentrated in a few locations and mechanization of most operations has long since been accomplished.

The pressure for specialization of function and new technology go hand in hand. The future will bring us more specialization, not less. Each function may cover many commodities as in storage and warehousing, but the ultimate division of responsibility and the dependency of each function on another will continue to grow. In this environment communication and dependable service are necessities. The system must have built-in safety nets or backup capability to run smoothly. A few groups in rural America may experiment with self-sufficiency but complexity and interdependence within the food system will grow and be even more evident.

The Transportation System and Product Flows

In much of China and Southeast Asia, rice is the diet staple today just as potatoes sustained life in Ireland 150 years ago. Most Westerners find it hard to believe that 50-75 percent of a family's energy or calories could come from a single food source. A high standard of living is based on trade, both within a great country like the United States or China or between producers in different countries.

The opening of the American West depended on great ribbons of water and steel. The great natural river system of America's heartland opened the way. Canals added to the network. At the start of the 19th century the Erie Canal provided a cheap water route through the Great Lakes from the Atlantic to the Midwest and back. A coast to coast rail system tied the country together more than 100 years ago. Trade within the United States and with Western Europe was built on the ability to move incredible quantities of goods and people everywhere within this fast developing nation.

Specialization of production and the benefits of trade depend on a low cost, dependable transportation system. The opportunity to have Gruyere cheese from Switzerland, Roquefort blue from France, and a variety of soft Italian cheeses available in almost any supermarket in the United States means the transportation system is highly developed and working well. Dutch cheese delivered to your store will have been transshipped a minimum of 4 or 5 times perhaps by highway, canal, sea transport, and a network of highways here.

The sharp jump in energy prices in the 1970's has placed new emphasis on transportation costs within the farm and food system. Many of the railroads built in the 19th century have been abandoned after less than 100 years. Producing units which no longer have access to rail transport seem disadvantaged. Public investment in highways and bridges has slowed. The percentage of marketing costs made up by transportation is slowly increasing. What may occur in the near future?

It would be interesting to chart all the trucks which carry farm and food products for a week in the United States. How many trips are made empty? How many milk trucks go by the same farms each day? How many specialty products are delivered individually to food stores? What has government regulation and teamster control done to transportation costs in America? It's easy to pose questions. The nature of the questions may imply some of the answers. Firms or segments of the food industry that can find ways to rationalize transportation will save money and reduce energy use and costs. The great tank trucks that bring orange juice north from Florida to New York City might well be allowed to carry a load of fluid milk south. A larger share of the refrigerated lettuce trucks that fan out from Salinas, California, could return with cargo. If product flows are to continue to improve, ways to build public facilities and allow greater mobility must be sought. The amount of public investment in highways and railroads, as well as in air and water transport, will strongly influence change in the farm and food system. Access to local, national, and international markets is highly dependent on an efficient, low cost transportation system.

Information Processing and the Computer Age

A modern, market based economy relies on accurate information which can be quickly transferred. Early traders carried products in caravans or by sea and brought news and visual proof of spices, new products, and events from the rest of the world. The modern farm and food system is international in scope and has connections on every continent of the world. Information is never complete or perfect but the flows are wonderfully rapid because of technical accomplishment in the past 40 years. In both the private and public sectors prices and production estimates can be transferred around the world almost instantaneously. The capacity to transmit information has far outpaced our capacity to obtain accurate, original data. In the next decades higher priority may well be given to improved estimation procedures for crop size, inventories, market flows, and transfer prices.

The electronic revolution is yet to be fully assimilated by most firms, but observers agree that the advent of computers and electronic data processing has changed the process of managerial control. The handling of inventories is an obvious example. Firms at every level in processing, manufacture, wholesale distribution, and retailing can control supplies and maintain product control through modern accounting systems. Ordering can be done electronically. Movement of every type of product can be recorded with little effort. Processing of data for accounts payable and receivable is a routine operation. Electronic checkout in supermarkets is no longer an untested idea but a reality.

The challenge is to harness the capacity of information systems to the needs of managers and decision makers. The capacity of computers to handle large volumes of data is clear. Often the need is to consolidate information into the form and order that a user needs. Too often there is a blizzard of paper instead of a few well-organized data sets. This is not the fault of the computer but of the individuals asking the questions or programming the information system.

In a world of specialists, a communication bridge must be established between decision makers and the operators of computing systems. Our complex farm and food system works well because information can be transferred so quickly and cheaply. Within the next few years we must seek new ways to reduce paper flows and transmit information electronically rather than through the mails. Safeguards must be established and checks on human error assured. In the future most orders, product flows, and accounts will be controlled electronically to the benefit of all parties concerned. Just as most people now take a pocket calculator for granted, so we should expect the electronic transfer of funds and computerized ordering and control as part of standard industry practice.

Exchange, Credit, and Banking

Food requires the single largest outlay of cash in most families each week. Many people do their banking at the store where they get their groceries. Store banks have become a common addition to consumer services in the 1980's. Historically transactions throughout the farm and food system have been largely on a cash basis. Accounts payable and credit have been extended for very short periods because food and many farm products are so perishable and are readily converted into cash. In a cash based economy, lines of credit and control over cash flows are essential, particularly when rates of interest escalate or fluctuate as widely as they did in the late seventies and early eighties.

A smoothly functioning connection between the banking and credit system on one hand and the farm and food system on the other is essential for both. This is particularly true at the retail level. A card which will allow direct transfers in the banking system from a customer's account to a retailer or from a retailer to a wholesaler, with weekly or monthly printouts of transactions, is now feasible. In fact the potential for electronic transfers properly registered in a safe manner is substantial.

The importance of credit and the need for borrowed capital at every level in the farm and food system is widely recognized. Specialized credit services have been developed to meet specific needs. Farmers can turn to banks, the Cooperative Farm Credit Service, the Farmers Home Administration, and in some areas, to life insurance companies for various forms of long and short term credit. In some communities competition among credit institutions has been reduced to two alternatives. In most cases a healthy, competitive environment exists. There is potential for food retailers to move more actively into banking functions as Sears Roebuck has done with Dean, Witter, Reynolds, Inc. The combination of electronic data processing, improved communication systems, and the need to handle cash flows efficiently means that the food industry and banking must experiment with new methods of communication and the transfer of funds. The consequences of such relationships are hard to envision. Nevertheless, more banking in food stores and a card rather than cash being required to make a purchase seem highly likely.

International Trade and the Growth of Markets

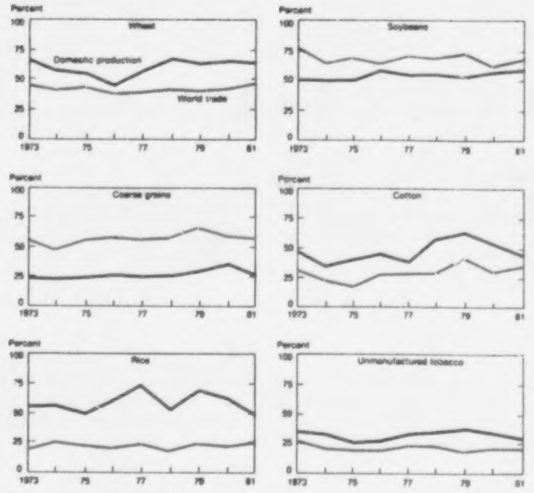
The farm and food system as we know it is highly dependent on trade. One third of the production from America's cropland is produced for export. Those sales provide the earnings for coffee, tea, cocoa, spices, bananas, and the myriad of imported foods we expect to have on hand in shops and markets across the land. Trade enhances our standard of living. Imagine how much poorer we would be if each of the 50 states were a separate country and we had to negotiate the movement of goods across each border. Trade in food and agricultural products has been liberalized within the last 40 years partially because American consumers and producers have recognized that they gain in the process.

With the striking progress made in information systems, communication networks, and international banking, markets have grown proportionately. The markets for wheat, soybeans, coffee, sugar, cotton, and corn are international. Individual countries may build walls around their own consumers and producers as we have tried to do with sugar. But the international market exists and functions. Thus in the United States we have stable but high prices for sugar, recently as much as twice as high as world prices. Quotas and tariffs regulate the amount of imports. High domestic sugar prices encourage internal production of substitutes like high fructose corn sugar.

The advantages of international trade prevail for a wide range of products and commodities. Prices differ for individual sizes, grades, and qualities of a given crop or food. But in a competitive market free from import and export restrictions these prices only differ by transportation and handling costs between market outlets within and between countries. In this manner most foods that Westerners enjoy are available anywhere in the world at some price. Where trade is encouraged, the differences in prices are relatively small.

The growth of markets within the borders of the United States has been substantial as transportation, communication, and the food system have evolved. Price differences between cities have generally shrunk. Artificial barriers to movement of some foods like fluid milk have been reduced. Regional differences in markets exist but national market forces are generally dominant. Advertising is increasingly national for brand items, even though the retail food industry must rely on local price comparisons for business.

It is important to recognize the international dimension of the farm and food system. Consumers expect to have a wide range of alternatives available in the cheese case and throughout the food store when they shop. Many American farmers, processors, and manufacturers are dependent on foreign markets for their livelihood. At the same time groups within the food industry argue strongly for protectionist legislation. Mexican tomatoes compete with those produced in Florida and Texas; imported cane sugar competes with domestic cane and beet production; quotas on imported dairy products have been in place for decades. Hence, debate on trade issues within the farm and food system will continue. An open system which encourages mobility of resources and enhances competition will generally benefit society. But some elements of protectionism exist in nearly all the countries where we carry on trade and they are likely to continue in the decades ahead.



Crop years used for share of domestic production.

Fig. 1 — U.S. Exports: Share of Domestic Production and World Trade.

Source: 1982 Handbook of Agricultural Charts, USDA, Agricultural Handbook No. 609.

Concentration of Power, Bigness, and Market Shares

Monopoly power or concentration of control in the hands of the few is a continuing concern of the majority in our society. Any large, interdependent system, where specialization is the rule, can be disrupted and hurt if one key group exercises control of critical resource flows to its own particular advantage at the expense of others. In a technologically advanced society, well-developed communication systems act strongly, but not instantly, to modify the natural instinct to exert such power. Galbraith's concept of countervailing power is at work in many places. Efforts to obtain control are scrutinized both by competitors and government agencies such as the Federal Trade Commission. In industries where specialists could, if but briefly, exercise the power to disrupt the market, public pressure and the threat of legal action reduce such predatory actions.

Farming is often cited as one of the last vestiges of a truly competitive system where the actions of any one producer cannot affect the markets or prices received by a neighbor. Even in production agriculture, however, individual farmers may become dominant forces in individual communities. Some ranches and cattle feeding operations are large by any standards. Vertically integrated broiler production is now the primary source of chicken in American supermarkets.

There is no lack of concern about concentration of power in the various sectors of the food industry. It is generally agreed that concentration of production is greatest in input supply on one side of farming and in processing and manufacturing for a few commodities on the other. But concentration and the potential to exercise market power and the imposition and abuse of that potential are two quite different things. One reason that more firms have not tried to exercise that potential is the freedom of other firms to enter such businesses and the potential for substitution of one product for another. The industry leader is often the most conscious of the difficulties associated with trying to exercise market control. The countervailing power of a public information system, mobile resources, and government act as strong deterrents to such control.

Bigness may also have its internal problems. Few giants survive at the top, as the fortunes of A & P and International Harvester should remind us. There are diseconomies associated with size in a firm even though economists and accountants have not been very successful in making the necessary measurements to prove this point. One of the interesting questions for the future will be whether some group in the food industry like retailers will try to exercise more control over suppliers. Information systems provide greater capacity to exercise control, but the potential costs may well continue to outweigh the prospective benefits.

The Role of Government and Regulation

Government has participated in shaping the farm and food system in both general and very specific ways. People in the food industry often feel overregulated. Health requirements, safety standards, quality controls, and grading systems all have some level of government participation. Local government relies on real estate taxes to carry out many of its basic functions. State and federal tax policies have claimed a share of net returns at every level in the industry. Investment tax credits, capital gains treatments, and income tax accounting have influenced the behavior of decision makers in the food industry as in every other. Indirectly, estate taxes and every method of raising revenue for government send a set of signals to participants and help to establish how capital is invested and distributed in every sector.

The farm and food system has entered into a number of unique interactions with government over the years to meet the particular needs of farmers, manufacturers, and consumers. Such interactions have sometimes resulted in legislation which ranges in detail from preferential assessment of farmland at the state and local level to consumer protection by the Food and Drug Administration at the federal level. Most of these laws have come about as a result of public initiatives. The range and scope of these relationships is large and pervasive. Most work well and are widely accepted as useful and necessary. In fact, it is easy to forget how many different functions within the food industry have a government component:

- weights and measures
- grades and standards
- federal and state inspection services
- Federal Trade Commission and investigations of monopoly power and concentration
- Interstate Commerce Commission and movement of goods within the United States
- the public system of roads and highways
- federal and state marketing orders for individual commodities
- the land grant university system and public expenditures for research and extension
- food stamps, WIC, and food distribution programs
- price supports, federal agricultural programs including the Commodity Credit Corporation
- special legislation for farmers' cooperatives, including the Farm Credit System

This list is partial and far from comprehensive. While individuals within the farm and food system frequently speak of getting government out of the food business, they are usually making a protest about some specific regulation or tax. The majority of them recognize that a partnership between government and industry is necessary. The real issues involve making the relationships work as well as possible.

In the future government and the food industry must continue to interact. Ways to reduce government regulation beyond ensuring health and safety and the correct identification of weights, grades, and product components will be explored. Agricultural producers will continue to look to government for assistance in research and education, as well as for income and price supports, when commodity markets are unable to balance supply with effective demand.

New initiatives are needed within the farm and food system itself to understand how the system works and the unique ways in which government at every level is involved in the smooth functioning of activity. Over time the importance of government has grown. In an ever more complex and specialized system, the role of government will not diminish but it must change in response to needs of both industry and consumers.

Conservation of Resources

Concern for conservation of scarce resources is not new. Recognition that water, soil, trees, and clean air may in fact be scarce or limited is a relatively recent phenomenon. The opening of the West in the 19th century was a time when our natural resources seemed endless. By the end of the 19th century, however, national forests and parks had been established and the public had begun to show some concern for conservation. The dust bowls and soil erosion of the 1930's made us more sharply aware of what can happen under stress. Acid rain, water pollution, and toxic substances have alerted the public to ecology and environmental degradation. All of society has a stake in natural resources and their use, especially the farm and food system.

One way to encourage conservation is to let the market work in pricing scarce resources. Until the 1970's cheap energy was taken for granted. Dramatic increases in costs have revolutionized energy consumption on the farm, in processing plants, and in distribution systems. Water has been publicly provided as a nearly "free" good to users in much of the country at all levels in the farm and food system. Increasingly water must be priced to users where supplies are scarce and competition exists between the farmers, food processors, manufacturers in other industries, and residential users. Conservation is encouraged when there is a penalty or direct cost for overconsumption.

Both the public and private sectors are giving increased attention to the handling of renewable and nonrenewable resources. Production of food and fiber is basic to human existence. Efforts to ensure that renewable resources such as water, trees, and clean air are maintained have gained priority. New initiatives such as minimum tillage in crop production save money and time and conserve topsoil. A combination of government initiatives through regulation and prohibition on the one hand, and cost incentives such as taxes, subsidies, and technical assistance on the other, can be used to encourage soil conservation, to reduce water pollution, and to remove harmful wastes and toxic substances from the public arena.

Concern for husbandry of resources and protection of the environment will continue to grow. Because the food system is so dependent on natural biological processes, the producer must respond to the conservation ethic and the potential costs of nonresponse in choosing where to locate production and what new technology to employ in farming and food manufacture. It is likely that the public sector will increasingly make users pay for a larger share of the actual cost of providing such resources as water and services such as waste removal. An incentive system to reward the wise and resource conserving use of production inputs has much to commend it.

Politics and the Food System

Historically, special interest groups have regularly used political power to shape public policy and influence economic development. Farmers, through their organizations and commodity groups, have played an important role throughout our country's history. Each of the sectors in the food industry is well represented in the lobbying groups in Washington as well as the halls of many state governments. The political process will continue to have a role in shaping the future of the farm and food system as it has in the past.

The right of individuals to seek and obtain the basic necessities of life is widely recognized. In the 20th century special initiatives have been taken in both the private and public sectors to assure that children and families have access to at least minimum diets. The idea of distributing food stamps grew out of farm surpluses and the economic depression in the 1920's and '30's. Such distribution evolved, was enacted as a national program in the 1970's, and has become a cornerstone of our domestic food policy. School lunch programs, WIC, distribution of surplus commodities to institutions, and nutrition education programs have all been developed out of twin motivations — (1) providing minimum food supplies and nutrition for the needy and (2) distributing and reducing agricultural surpluses acquired in government programs.

A quite different dimension of politics is involved when food has been used as a "weapon" or tool of international diplomacy. The embargo on sales of soybeans in the early 1970's and the decision to cut off shipments of wheat and corn to Russia in 1980 because of that country's intervention in Afghanistan are clear examples of limiting access to food because of domestic or international political considerations. Much has been said about both of these cases. The farm sector spoke vigorously in protest to both decisions. Consumer interests in the first case and political pressure by the State Department in the second prevailed. Most people agree that food should be sent wherever it is needed throughout the world when natural disaster requires it. It is also now recognized that the "Food for Peace" programs of the postwar years may have reduced American grain surpluses at the considerable cost of discouraging new investment in agricultural production in some recipient, low-income countries. In other cases these initial food distribution programs, in combination with other economic development programs, have helped to create hard currency markets for American grain — in South Korea, Taiwan, Malaysia, and Singapore.

However a national program for the distribution of food or agricultural commodities is constructed, it will have some effect on various parts of the whole interdependent system. Sudden shifts in policy like the embargo on exports of grain to Russia affect prices and costs to many people. The potential gains and losses from such actions need greater study and concern from individuals within the food system itself. While politics cannot be removed from decisions about food supplies and their distribution, awareness of consequences of political actions can be recognized. The system itself must be part of the means to public awareness. It is, after all, very much a part of the political process and is actively involved in influencing government at every level.

Cheese and the Supermarket in Ten Years

If you go to pick up some cheese at a store 10 years from now, things will be different. No one knows for sure what will be in the dairy case or what the store will be like. But there will be change. New brands and packages will be here as well as some brands from 10 years earlier. The number of alternatives may be larger or smaller. Whatever happens, the changes will reflect the tastes and preferences of consumers and their buying power. New technology will have left its mark in terms of products, flavors, and packaging. The way the cheese is priced and marked and the way you pay may well seem like an electronic miracle in terms of current technology. Trade and transport will still be key determinants in the cost of these products. Government will retain its role in health, safety, grades, and labeling. No doubt the politics of food and agriculture will be very much alive although the specifics of government activity in the dairy industry will be different. All the dynamics of the farm and food system will have been at work trying to serve the needs of people as efficiently and smoothly as possible.

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Profile of the U.S. Farm Sector

David H. Harrington and Alden C. Manchester*

ABSTRACT

The farm sector of the eighties bears little resemblance to its forebear of the thirties. Specialization, technology, and a sophisticated financial system of credit, tax, and international monetary policies have dramatically altered U.S. farming from a set of numerous, small, labor-intensive units to a diverse sector encompassing a wide scale of size, costs, needs, and production efficiencies. Indeed, there is a growing concern that the farm sector has grown so diverse that a single farm policy may be insufficient to address those needs. Domestic and international economic policies play important roles in the well-being of farmers, and future farm policy will need to incorporate those concerns if it is to address the issue of instability of incomes and prices.

KEYWORDS: Debt-asset ratio, farm income, farm numbers, farm size, financial organization, specialization, tax policy, technology.

INTRODUCTION

The organization of farming and the effects of public policies upon it have been issues in American public life since independence. For the first 80 years, the principal issue was the basis upon which public land was made available to settlers, culminating in the Homestead Act of 1862. From then through World War I, the establishment of agricultural science, extension, and marketing services received major attention. The agricultural depression of the twenties brought concern for the generally low level of farm income and attempts to deal with it through the first commodity programs. The Great Depression created a crisis for agriculture which prompted New Deal agricultural programs, directed toward the great bulk of family-operated farms with severe income problems.

The postwar debate on agricultural policy focused on an agriculture composed primarily of family farms, which were defined as viable operations, able to support their operators adequately and offer full employment (3; 4, p. 68). The consolidation of part-time, marginal, or subsistence operations into larger farms was part and parcel of a family farm policy. The major policy issue relating to small farms during the forties, fifties, and sixties was the problem of moving excess human resources out of agriculture and off the small farm. Rural development programs were seen as a way to provide jobs off the farm in rural areas. The small farm issue came to be seen as a welfare matter that really had little to do with commercial agriculture (4, p. 70). The major structural problem of the forties--the overabundance of resources, especially labor--was

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largely solved by events of the fifties and sixties--by the millions, the operators of such small farms and their families picked up and moved to cities and suburbs.

Today's commodity policies are the descendants of the programs of the thirties, differing in many ways but more alike than different. At the depth of the Depression, it was decided that commodity programs would be generally neutral as to farms of different sizes. Farms of all sizes were in deep trouble and all would be helped by curtailing production and raising prices.

During the past half-century, the organization of farming and its economic and financial situation have changed markedly. There is mounting evidence that the farm sector has grown so diverse that it may require a policy perspective that extends beyond the farm gate, implying that the policies appropriate for the eighties need to be examined anew.

THE EVIDENCE OF DIVERSITY IN THE FARM SECTOR

To examine the diversity of the farm sector, this section looks at two broad components: the organization of production and the financial organization.

Organization of Production

The U.S. farm sector has evolved from a large collection of small family-operated units to a spectrum of farms ranging from small to large, with varying degrees of output, technology, and specialization.

Farm Numbers and Sizes

The number of farms has declined by nearly two-thirds since 1935 while the amount of land in farms has decreased only 1 percent (table 1). The decline in farm numbers slowed after the fifties and sixties and is now confined to farms with sales of less than $40,000 per year in current dollars.

When corrected for inflation, farms with sales of $40,000 to $99,999 increased in number until 1970 and then declined (fig. 1 and table 2). In the seventies, the rate of decline in farm numbers was greatest for the smallest farms and the rate of increase was highest for those with sales over $200,000 per year. The change in the inflation-corrected size distribution has been due to technology, increasing off-farm income, and increasing specialization.

Family Farms and Sales Classes

Throughout the history of agricultural policy, support for a family farm concept has assumed a primary position. In economic terms, the concept of the family farm is one large enough to support a family and provide fulltime employment for the operator. In this article, family farms are defined as those with sales of $40,000 to $199,999 at 1980 prices; those with larger sales are defined as larger-than-family farms, many of which are multiple-generation family farms.

Because of the relative decreases in the sales of small farms and the growth of very large farms, the share of sales by the largest 5 percent of farms has gradually increased:

Percent of total sales by largest 5 percent of farms

1939	38.3
1949	38.8
1960	41.5
1970	46.6
1980	50.6
1982	50.1

Only 55 percent of all farm operators listed farming as their principal occupation in 1982 (table 3). About 90 percent of those with sales of $40,000 or more were principally farmers, but only 23 percent of those with sales of less than $2,500 were, and many of these were 65 years or older.

Specialization

Farming has become increasingly specialized as farmers have applied specialized, capital-intensive production technologies that increase the advantages of size, aided by Government farm programs that reduce the need for farm diversification as a method of lessening risk. But specialization has increased for all commodities—not just for those with Government programs (table 4).

Just as farms are becoming more specialized in producing specific commodities, they are also becoming more specialized in performing the functions required for producing and marketing agricultural commodities. Much of the work and many of the functions formerly performed on farms have shifted to nonfarm firms. Much more of the inputs which farmers use are now purchased rather than produced on the farm itself, and this trend is continuing. Between 1910-14 and 1980, total inputs used in farming increased 19 percent. Those purchased by farmers rose 224 percent, while nonpurchased inputs—operator and family labor and inputs from land, buildings, and machinery—decreased 48 percent. At the same time, intensive use of purchased inputs has increased farmers' vulnerability to rising prices and interruptions of input supplies.

Technology of Production

American agriculture achieved tremendous gains in productivity between 1930 and 1980. Total output rose by almost 150 percent, while total inputs increased only slightly—by 7 percent (fig. 2). The source of productivity gains was adoption of technological change. Mechanization, hybrids and improved varieties, commercial fertilizer, pesticides, and irrigation all enhanced the productivity of land and labor, encouraged the substitution of capital for labor, and facilitated a large outmigration of labor from agriculture (8,19,24). In the last two decades alone, labor use dropped by nearly half, but the share of hired labor increased (fig. 3). Land inputs have remained fairly constant. Current agricultural production technologies were developed in an era of abundant, low-cost energy and were designed primarily to replace human labor with mechanical power and chemicals. This input substitution has been a key factor behind the decreasing number and increasing size of farms for several decades. Since financial stress of declining incomes and asset values gripped the farm sector in the early eighties, chemical input expenditures have declined.

Technological changes, especially those which encouraged substitution of capital for labor, combined with specialization of production into farm units producing

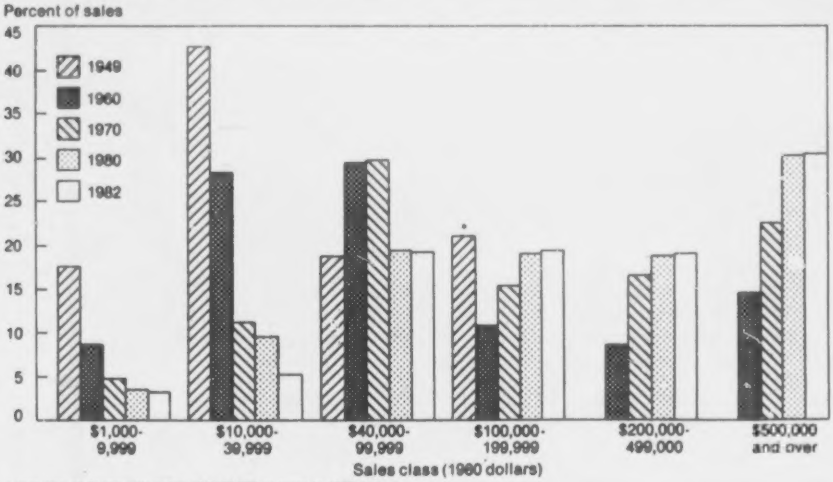
Table 1--Farm numbers and sizes

Year	Number of farms 1/	Land in farms	Average size of farm
	Thousands	Million acres	Acres
1930	6,295	990	157
1935	6,812	1,054	155
1940	6,102	1,065	175
1950	5,648	1,202	213
1960	3,963	1,176	297
1970	2,949	1,102	374
1980	2,433	1,039	427
1981	2,434	1,034	425
1982	2,401	1,028	428
1983	2,370	1,024	432
1984	2,333	1,020	437

1/ The definition of a farm changed in 1959 and 1974.

Figure 1

Distribution of farm sales by sales class, 1949-82



* Includes all farms with sales of $100,000 or more in 1980 dollars.

Table 2--Approximate distribution of farms and sales at 1980 prices, by sales class, 1949-82 1/

Year and item	Larger-than-family farms		Family farms		Small family farms		Rural residences		All farms 1/
	$500,000 and over	$200,000 to $499,999	$100,000 to $199,999	$40,000 to $99,999	$20,000 to $39,999	$10,000 to $19,999	$5,000 to $9,999	$1,000 to $5,000	
	1,000 farms								
Number of farms:									
1949	--	--	50	239	601	878	1,002	2,205	4,975
1960	16	32	76	455	594	636	675	1,300	3,784
1970	16	68	122	566	314	376	338	1,075	2,875
1980	24	84	179	388	279	286	332	856	2,428
1982	25	87	186	393	273	281	331	824	2,400
	Percent								
Percent of farms:									
1949	--	--	1.0	4.8	12.1	17.7	20.1	44.3	100.0
1960	0.4	0.8	2.0	12.0	15.7	16.8	17.9	34.4	100.0
1970	.5	2.4	4.2	19.7	10.9	13.1	11.8	37.4	100.0
1980	1.0	3.4	7.4	16.0	11.5	11.8	13.7	35.2	100.0
1982	1.0	3.6	7.7	16.4	11.4	11.7	13.8	34.4	100.0
Percent of sales:									
1949	--	--	21.0	18.7	24.4	18.3	9.5	8.1	100.0
1960	14.6	8.6	10.9	29.2	17.9	10.2	5.1	3.5	100.0
1970	22.5	16.5	15.3	29.6	6.8	4.5	1.9	2.9	100.0
1980	30.0	18.8	19.0	19.3	6.3	3.2	1.9	1.5	100.0
1982	30.1	19.0	19.3	19.2	6.1	3.1	1.8	1.4	100.0

-- = Not available. Included in $100,000-$199,999 sales class.

1/ Includes only farms with sales of $1,000 or more at 1980 prices.

Table 3--Age and principal occupation of farm operators by sales class, 1982

Sales class	Farming			Other occupations			Total farming and non-farming
	Under 65	65 years and older	Total farming	Under 65	65 years and older	Total non-farming	
	Percent						
$500,000 or more	81.9	9.1	91.0	7.7	1.3	9.0	100.0
$250,000 to 499,999	86.1	6.9	93.0	6.2	.8	7.0	100.0
$100,000 to 249,999	86.6	6.2	92.8	6.5	.7	7.2	100.0
$40,000 to 99,999	79.0	9.2	88.2	10.7	1.1	11.8	100.0
$20,000 to 39,999	57.6	14.3	71.9	25.4	2.7	28.1	100.0
$10,000 to 19,999	38.7	17.8	57.5	38.1	4.4	42.5	100.0
$5,000 to 9,999	24.9	16.7	41.6	50.8	7.6	58.4	100.0
$2,500 to 4,999	18.8	14.8	33.6	57.5	8.9	66.4	100.0
Less than $2,500	12.9	9.8	22.7	66.9	10.4	77.3	100.0
Total	42.9	12.2	55.1	39.3	5.6	44.9	100.0

Source: Census of Agriculture, 1982, Vol. 1, Part 51, pp. 48-49.

Table 4--Farm specialization: Farm sales derived from primary commodity, by type of farm, 1969 and 1982

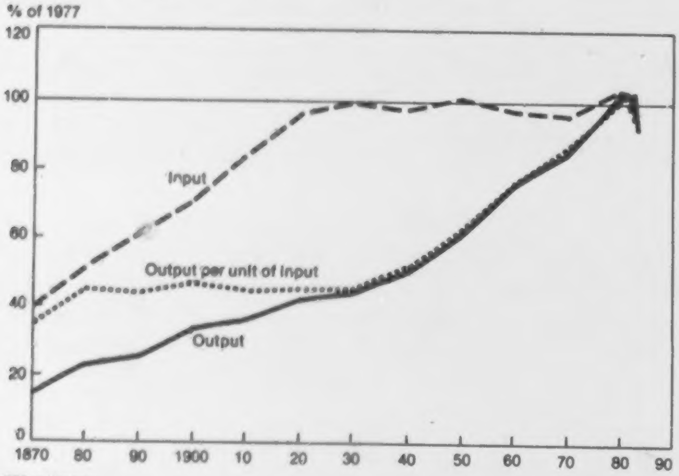
Type of farm	1969		1982	
	Percent of farms	Share of sales from primary commodity	Percent of farms	Share of sales from primary commodity
	Percent			
Cash grain	21.3	81	25.7	86
Tobacco	5.2	80	5.9	80
Cotton	2.3	69	0.9	76
Other field crops	1.8	82	4.5	79
Vegetables	1.1	86	1.4	86
Fruits and nuts	3.1	95	3.8	95
Horticultural specialties	--	--	1.3	98
Dairy	15.1	78	7.3	84
Poultry	3.3	94	1.9	95
Animal specialties	--	--	2.9	95
Other livestock	32.8	84	40.5	86
Total	86.0		97.5	
Other farms	14.0	less than 50	2.5	less than 50

-- = Not available.

Sources: U.S. Bureau of the Census, Census of Agriculture, 1969 and 1982.

Figure 2

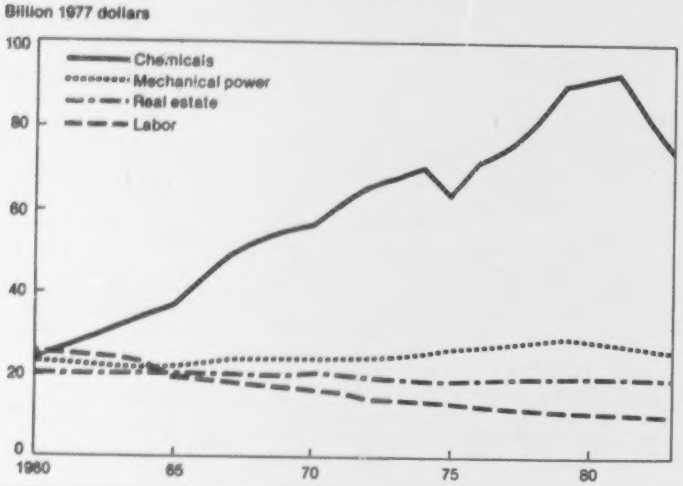
Farm productivity



1983 preliminary.

Figure 3

Changing mix of inputs used in farm production



a single or a few commodities, made traditional size family farms too small to fully employ a farm operator family. The low net income of these farms provided a strong incentive for their owners to adjust. In the fifties and sixties, this seemed to be an incentive to "get bigger or get out." In the seventies and eighties, by contrast, the farmer seems to have an incentive to "get bigger or get smaller" (become a part-time farmer) in order to achieve a desired standard of living.

Economies of size have been a source of productivity gains, but the potential contribution of further farm expansion to enhancing productivity is unclear (28, 29). Economies of size arise from:

- Technical economies--efficiency in use of inputs.
- Buying economies--quantity discounts and better terms for larger purchases.
- Marketing economies--higher prices for larger quantities sold and lower unit marketing costs.
- Tax advantages--nonmarket tax gains for delaying or avoiding taxes on income from any source.
- Managerial economies--more effective management of risk, hired labor, and other functions.

Empirical estimates of longrun average cost curves for various farm types and sizes based solely on technical economies of size suggest that costs per dollar of gross income consistently decline as small farms expand, then taper off for medium-size farms, and fall very little for large farms. Virtually all technical economies of size inherent in the current technology have already been exploited by family-size crop farms. Although further technological changes will almost certainly continue to hold down food costs, for the typical family farm, financial, tenure, and equity considerations are capable of overshadowing gains due to technical economies of size (13, 14).

Comparing size classes of farms in 1982 with comparable sizes in 1960 summarizes the changes of the period (table 5). The cutoff points between the farm-size categories in 1982 are roughly 4 to 5 times the corresponding sales values of 1960, yet the percentage distributions of numbers of farms and total production are nearly unchanged. Roughly half the farms are noncommercial, rural residences; roughly 5 percent are larger-than-family-sized operations. The noncommercial half of the farms produce only 3 to 5 percent of total output, but the larger-than-family-sized operations have increased their share of total output from one-third to one-half in the last two decades. It took slightly fewer acres of crops to equal the dollar sales of the various size classes in 1982 than in 1960. Forty acres of corn at 1982 yields and prices would put a farm at the $10,000 break between rural residences and small family farms. In 1960, it would have taken 45 acres to produce $2,500 worth of corn, the break between the two size categories at that time. In 1982, a family-sized farm would require between 160 and 640 acres of land--if it were all used for crops as intensive as corn. Larger-than-family-sized farms, beginning at about 640 acres, do not necessarily imply large, nonfamily agriculture, but rather multiple-operator or multiple-generation family farms.

Table 5--Profiles of farm size categories, 1960 and 1982

Measure	Rural residences	Small family farms	Family farms	Larger-than-family farms
Sales class:				
1982	Less than $10,000	$10,000-39,999	$40,000-199,999	$200,000 and up
1960	Less than $2,500	$2,500- 9,999	$10,000- 39,999	$40,000 and up
Percent of farms:				
1982	49	23	23	4
1960	46	32	19	3
Percent of production:				
1982	3	9	39	49
1960	5	22	40	33
Approximate cropland used 1/:				
1982	up to 40 acres	40 to 160 acres	160 to 640 acres	640 acres and up
1960	up to 45 acres	45 to 175 acres	175 to 700 acres	700 acres and up
Approximate labor input at most common technology: 2/				
1982	up to 5 person-wks.	5-20 person-wks.	20-100 person-wks.	>100 person-wks.
1960	up to 9 person-wks.	9-36 person-wks.	36-144 person-wks.	>144 person-wks.
Ratio of production expenses to cash receipts:				
1982	2.35	1.20	0.96	0.76
1960	.84	.71	.74	.75
Net farm income per farm:				
1982	-$737	-$121	$10,100	$169,402
1960	806	2,594	6,030	17,274
Off-farm income per farm:				
1982	$19,894	$15,092	$10,746	$16,696
1960	2,732	1,706	1,390	2,177
Assets per farm:				
1982	$134,493	$313,372	$791,174	$2,337,491
1960	18,600	40,000	105,000	260,000

1/ Approximate acres of corn, at yields and prices of the day, that would be required to provide gross sales equal to sales cutoff points of size category: 1982 = 109 bu./acre @$2.10, 1960 = 54 bu./acre @$1.05.

2/ Approximate labor input required to produce the acreage of corn required in footnote 1, assuming common field crop technology of the day.

Most striking is the decline in labor inputs required by a crop farm in each of the size categories. Owing to more mechanization, the introduction of pesticides and herbicides, increasing yields from new varieties, and higher rates of fertilization, the amount of labor that would be required to be in the rural residence category dropped from 9 weeks to 5 weeks. Similarly, the labor required by a corn farm at the cutoff point between family-sized farms and larger-than-family-sized farms was 144 weeks in 1960, but only 100 weeks in 1982. This fact alone helps explain the squeeze on the incomes of operators of family-sized farms; comparable-sized farms are putting in less labor now than they did in 1960.

Financial Organization

This section looks at the changes that have taken place in the financial environment of agriculture. Income and its sources, the composition of assets and claims, and the financial strength of the sector are evaluated.

Form of Business Organization

Farm businesses are organized in three principal ways: sole proprietorships, partnerships, and corporations. Sole proprietorships are the simplest and most common form of organization (87 percent of farms in 1978 and in 1982), followed by partnerships (10 percent), and corporations (2 percent in 1978, 3 percent in 1982) (fig. 4). All types are chiefly family organizations: in partnerships, the partners are usually related by blood or marriage and most corporate farms are family-owned and operated (9, 31). Corporations have grown the most, especially in the larger sales classes, both in total numbers and as a proportion of all farms (tables 6 and 7).

Figure 4

Form of business organization, 1982

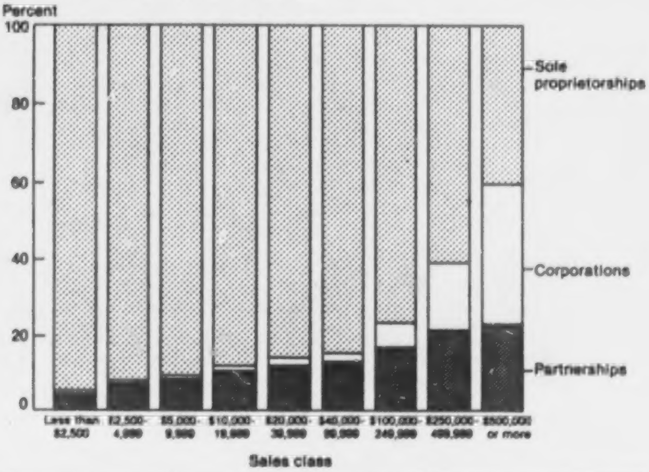


Table 6--Number, land ownership, and value of sales of corporate farms as a percentage of all farms

Item and year	Corporate farms with--	
	10 or fewer shareholders	More than 10 shareholders
	Percent	Percent
Number of farms:		
1974	1.1	0.1
1978	2.0	.1
1982	2.6	.1
Land in farms:		
1974	7.3	2.1
1978	10.1	1.6
1982	11.7	1.9
Sales:		
1974	12.3	5.7
1978	17.4	4.2
1982	19.8	4.1

Sources: U.S. Bureau of the Census, _1974 Census of Agriculture_, Vol. IV, Part 5; _1978 Census of Agriculture_, Vol. I, Part 51; and _1982 Census of Agriculture_, Vol. 1, Part 51.

Table 7--Average income per farm, by type of business organization, 1974 and 1978

Year and type of organization	Net farm income	Off-farm income
	Dollars	
1974:		
Sole proprietorships	7,482	10,193
Partnerships	16,683	11,003
Corporations	65,937	--
Other	23,003	--
All farms	9,303	10,066
1978:		
Sole proprietorships	8,715	12,301
Partnerships	18,283	10,059
Corporations:		
Subchapter S	57,708	--
Other	334,475	--
Other	13,647	--
All farms	10,942	11,790

-- = Not applicable.
Source: Richard W. Simunek and Lise Poirier, "Comparing IRS Farm Data Trends with USDA Measures of Farm Income," _Economic Indicators of the Farm Sector. Farm Sector Review, 1982_, ECIFS 2-1, Econ. Res. Serv., May 1983.

Federal tax policies probably have had more influence on the conversion of farms to corporate organization than have other Federal policies (1, 7, 15, 20). Corporate tax rates are much lower than individual rates for taxable incomes above $25,000 to $35,000 (1). Corporate income tax provisions enable farm corporations to increase equity capital through retained earnings at a faster rate than sole proprietorship or partnerships. Corporate farmers who reinvest a significant portion of farm earnings in the business can still make substantial total tax savings. Further, Federal tax policies encourage certain nontaxable fringe benefits for corporate farmowners. On the other hand, Social Security taxes are higher on the salaries of incorporated farmers than unincorporated farmers.

Tenure

Some farm operators own all their land, some rent all of theirs, and others own some and rent the rest. The full tenancy rate declined noticeably from the thirties to the late sixties and has remained constant at about 11 percent since then. Land rented by farm operators from nonoperator landlords has increased. As a percentage of total land in farms, rented farmland dropped from 45 percent in 1935 to 37 percent in 1969 and has remained relatively constant since then.

Farms in the lower sales classes are overwhelmingly full owners--70 percent of those in the rural residence category--while only 11 percent are full tenants and 19 percent are part owners. Among family-size farms, 60 percent are part owners, 27 percent are full owners, and 12 percent are full tenants. Larger-than-family-size farms have a slightly higher proportion of full ownership, 33 percent, and slightly lower proportions of full tenancy, 10 percent, and part ownership, 57 percent.

Current Income

The income of farm operator families, which includes farm-generated income, off-farm income, and Government payments, was below the national median and average family income in 1982, a year that typifies the income situation of the eighties, except for the largest sales classes (fig. 5). Income of farm operator families in the $200,000-and-over sales classes significantly exceeded the national median family income.

The distribution of income among farm families has become more bimodal due chiefly to the growth of off-farm income in the lower sales classes. Farm operator families on small family farms ($10,000 to $39,999) have incomes below the U.S. median family income in most years. They are too small to generate favorable incomes exclusively by farming but too large to allow full-time off-farm employment. Incomes of operator families in the $40,000 to $199,999 sales class were unusually low in 1982 because of low prices of farm products and continued inflation in farm input and operating costs.

Larger farms account for an increasing share of farm-generated income. 1/ Farms with $40,000 or more in sales accounted for 28 percent of farms and virtually all of the farm-generated net income from 1980 through 1982. Farms with sales of

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1/ 1982 was chosen for this analysis because it is the most recent near-normal year. The payment-in-kind program significantly distorted 1983 income sources, especially Government payments and inventory changes.

less than $40,000 (61 percent of farms, mostly rural residences) had negative farm-generated income in 1982.

Off-farm income raised the average of all farmers above the national median family income and constituted 67 percent of all 1982 income of farm operator families.

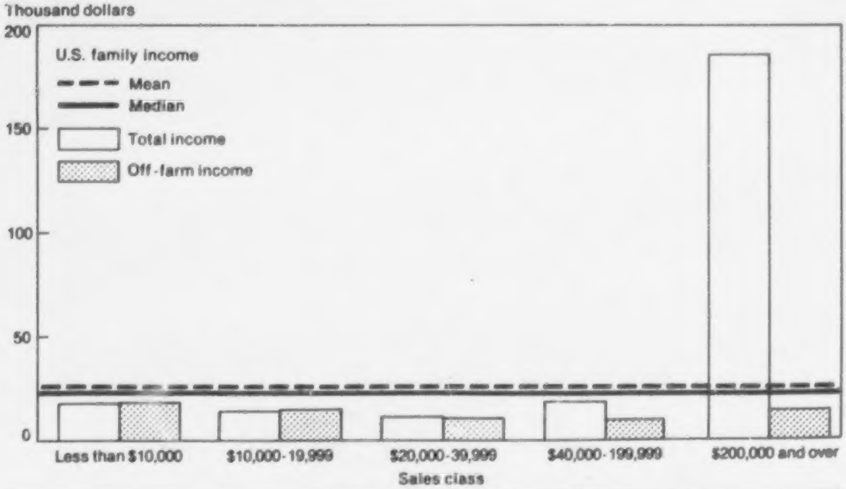
Direct Government payments in 1982 amounted to almost $3.5 billion, 6 percent of the current income of farm operator families. Since direct commodity payments are made on the basis of volume of production, the larger sales classes received most Government payments. However, the concentration of farms producing fruit, vegetable, and animal products which do not receive direct commodity payments means that direct Government payments were distributed differently than cash receipts in 1982:

	Percent of cash receipts	Percent of direct Government payments
Larger-than-family farms	49.1	22.3
Family farms	38.5	56.1
Small family farms	9.2	14.5
Rural residences	3.2	7.2

Note, however, that indirect benefits received through the market from support programs, market orders, and other programs are reflected in cash receipts, rather than Government payments.

Figure 5

Average farm family income, 1982



Composition of Assets and Claims

In general, even farms in the smallest sales categories represent substantial accumulations of wealth and equity, with assets ranging from $134,000 for rural residences to $2.3 million for larger-than-family farms. Similarly, proprietors' equities average from $120,000 to $1.6 million per farm over these same sales classes (table 8).

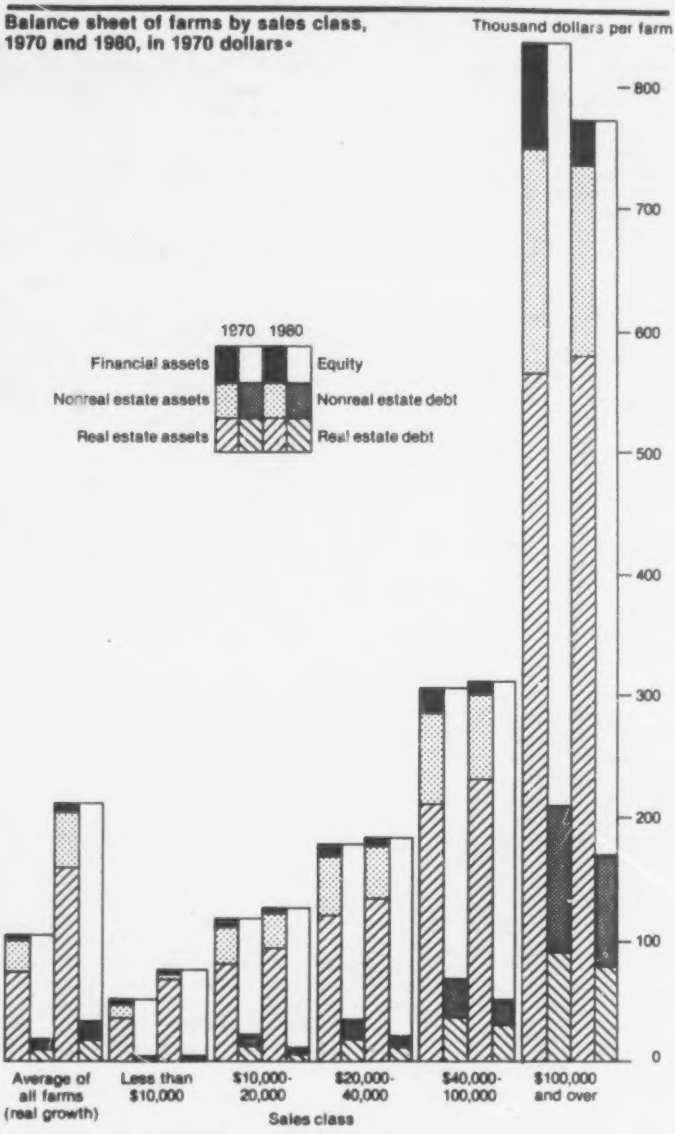
Assets, debts, and proprietors' equities grew substantially during the seventies both in aggregate and on the average in each sales class (fig. 6). Aggregate assets tripled in nominal terms between 1970 and 1980. For the average farm, assets nearly quadrupled in the same period, but real growth was 67 percent. In the seventies, proprietors' equity increased faster and debt grew more slowly than the value of assets, implying a net strengthening in the debt/asset position of farmers. In the early eighties, however, real wealth of the sector declined each year.

Table 8--Balance sheet of the farming sector: Profile of average farm, by sales class, January 1, 1984.

Item	Rural residences	Small family farms	Family farms	Larger-than-family farms	All farms
	$10,000 or less	$10,000-$39,999	$40,000-$199,999	$200,000 and over	
			Dollars		
Assets:					
Real estate	100,873	239,855	597,751	1,704,906	322,624
Nonreal estate	29,373	66,927	177,815	434,925	91,373
Financial	8,082	13,481	30,161	154,701	21,123
Total	138,328	320,263	805,727	2,294,532	435,120
Claims:					
Real estate debt	10,407	26,120	86,206	347,019	47,108
Nonreal estate debt	5,591	19,624	66,471	354,075	38,925
CCC loans	58	2,060	10,898	32,878	4,558
Total	16,056	47,804	163,575	733,972	90,591
Proprietors' equity	122,272	272,459	642,152	1,560,560	344,529
			Percent		
Debt-to-asset ratio	11.6	14.9	20.3	32.0	20.8

Figure 6

Balance sheet of farms by sales class, 1970 and 1980, in 1970 dollars*



* 1980 converted by using GNP implicit deflator (includes farm households).

Capital gains have been extremely important in the growth of wealth of farm operators. In the seventies, capital gains were positive and at least four times as great as net farm income for all but 3 years. Nominal capital gains, although largely unrealized, exceeded realized net farm income for every sales class in 1980--as was the case throughout most of the seventies. In fact, pursuit of such capital gains may have induced farmers to expand and use credit more than was prudent in the seventies. Nominal capital gains to the farm sector were negative in 1981-82 and small in 1983, as declining real estate values resulted in capital losses in some areas. However, just as capital gains usually remain unrealized, so do capital losses unless a farm experiences such severe cash flow problems and declining equity levels that liquidation or bankruptcy occurs. The most highly leveraged farms--those that recently expanded or that used a lot of their equity to cover past cash flow losses--are the first to feel the stress of declining rates of capital appreciation or, more severely, lower values of farm assets (see also 27).

Financial Strength of the Farm Sector

As of January 1, 1984, farms in the highest sales category had the highest debt/asset ratios and farms in the lowest sales classes the lowest ratios. Farmers with debt/asset ratios above approximately 40 percent generally must delay or refinance debts when faced with a year of unfavorable income. Thus, a few years of poor returns, badly spaced, as have occured since 1980, can bring even a reasonably well-established farm with 60 percent equity and 40 percent debt to forced liquidation.

A relatively high proportion of farms in the family farm and larger-than-family farm categories have debt/asset ratios above 40 percent, which many financial analysts consider a danger point. Over 20 percent of the family farms have debt/asset ratios in excess of 40 percent. Nine to 15 percent of the farms with sales greater than $50,000 have debt/asset ratios of 70 percent or more, which analysts view as the extreme vulnerability zone (fig. 7).

The farm sector is subject to extreme variability of net income with attendant cash flow problems (fig. 8). Low and variable realized returns and high, fixed interest payments contribute to financial instability of the sector. In short, the farm sector is becoming increasingly prone to "boom or bust" cash flow situations. Without some form of cash flow stabilization or diversification of income sources, farms will be able to support only modest debt/asset ratios. This also is due, in part, to the strong reliance on the sole proprietorship form of organization as opposed to partnerships or corporate forms. The latter can seek new equity sources for expansion rather than rely totally on debt financing.

The resulting restrictions on debt acquisition could inhibit the ability of farms to make capital investments in improved technology or adopt specialized, capital-intensive, cost-reducing production methods. This financial instability influences the patterns of farm consolidation in the sector. Acquiring additional farmland would place most medium-sized farms in highly vulnerable, leveraged positions. But large, well-established farms have the financial means to absorb other farms or large tracts of land; and small farms can purchase small tracts because of their off-farm income, without such vulnerability. Thus, midsize fulltime farms are at a disadvantage to both small and large farms in acquiring additional land.

Figure 7

Farm operators with high debt/asset ratios by sales class, 1984

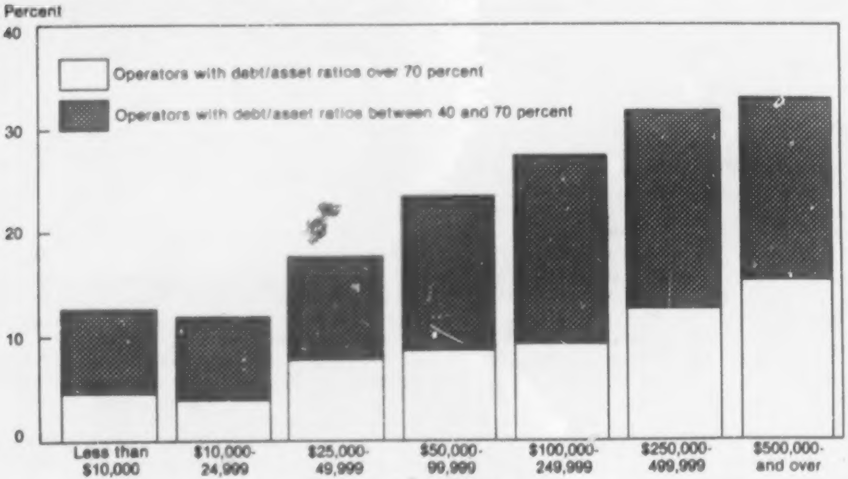
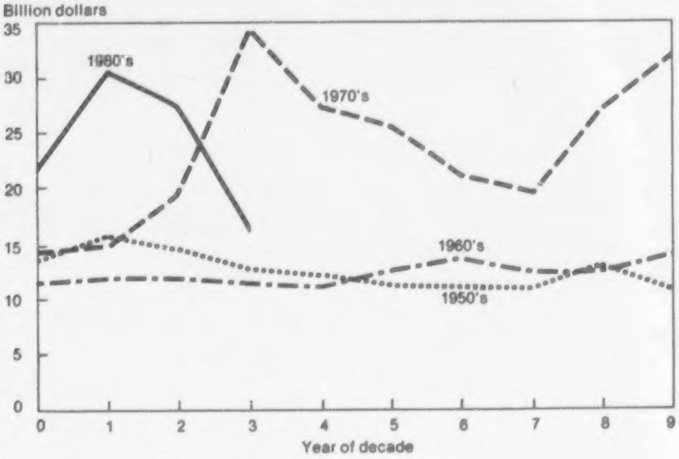


Figure 8

Instability of net farm income over three decades



Farm income after inventory adjustment.

INSTITUTIONAL ENVIRONMENT

The farm sector operates in a unique economic and institutional environment, which has led to a number of public policies aimed at altering its performance in the face of the environment. The farm sector is composed almost entirely of owner-operator farms that are price-takers, with a high proportion of their assets in the form of land, operating in unstable markets characterized by inelastic domestic demands and uncontrollable fluctuations in exports.

Competitive Unstable Markets

Since individual farmers are price-takers, they have quickly adopted new, cost-reducing or output-increasing technologies of production, storage, and marketing to increase profit margins. Early adopters of a technology derive only temporary benefits from it. The cost-reducing technology results in an increased total supply of the products affected, driving down prices and profits of the early adopters to the new cost levels and forcing late adopters to use the new technology merely to stay in business. Because of this technological treadmill, the sector has had to be progressive and efficient and the benefits of technological advances and productivity increases have been passed on to consumers of farm products, who—as taxpayers—financed much of the research behind those changes (6, 24, 35). (See the article on emerging technologies elsewhere in this report).

After remaining relatively stable through the fifties and sixties, net farm income gyrated widely in the seventies and early eighties (see fig. 8). Prices received and personal income of the farm population are more variable and cash receipts a little less variable. Net farm income changed from one of the most stable portions of farmers' personal income to one of the most unstable elements. Instability of incomes in agriculture stems from many sources, all important.

Domestic Demand

Farming, being biologically based, is subject to yield and production variability caused by weather, disease, and natural hazards. For example, national average yields and total production of corn dropped by almost 20 percent between 1979 and 1980. And because domestic markets for agricultural products have inelastic demands, total income to producers of a commodity can be severely depressed by bumper crops while a partial crop failure can raise receipts sharply. Increases in supplies result in even greater decreases in prices, causing total incomes to fall. The opposite happens if production falls short. As a result, current income to the farm sector can be very volatile from year to year. Over a period of several years, however, the responsiveness of the farm sector—in increasing the supplies of products that show shortrun profits—causes reductions in all commodity prices and increases in factor prices (primarily land) to levels that just cover the costs of maintaining the resources in production (12).

Global Uncertainties

World demand for U.S. agricultural products is highly variable due to both global production and the trade practices and policies of large international customers. Also, some foreign customers are marginal or occasional participants in the world market. That is, exports and imports depend a great deal on the size of their current crops, making the United States the residual source of supply to the rest of the world. In the three decades from 1950 to 1980, exports increased from 5 percent to 18 percent of gross farm output. For some important agricultural exports, up to 60 percent of the world's exportable supplies have been produced in the United States in recent years. Exports have taken as much as 70 percent of U.S. production for wheat and 50 percent for soybeans. International markets are thin, volatile, and subject to the vagaries of weather, international politics, and currency exchange relationships. World grain production did not deviate more than 5 percent from trend in 1972/73, but this shortfall, exacerbated by the policies of many of our trading partners, resulted in large commodity price increases and sharply increased farm income and U.S. agricultural trade grew at rates exceeding 8 percent per year throughout the balance of the seventies.

While expanded markets for U.S. farm products have contributed to growth in the farm sector, they have also contributed to the instability of agricultural markets. U.S. crop and livestock producers and consumers have absorbed most of the costs of the resulting variability. The variability of net farm income was about twice as great in the seventies and early eighties as in the fifties. The sensitivity of international markets to changes in currency exchange relationships is underscored by the fact that in 1982 the realized dollar value of U.S. agricultural exports declined even though foreign buyers paid more in their own currencies than they did in 1981. The strengthening of the dollar in international exchange is related to the current high interest rates that accompany efforts to fight inflation through monetary policy.

Variability of net returns stemming from production, demand, and cost variation is only part of the problem. Concurrent changes in the economic environment and the inflationary expectations of investors in farmland have amplified the problem of instability. In the seventies and early eighties, several changes in the economic setting of agriculture occurred—largely linked to inflation in the general economy and to the value of the dollar in international exchange.

The real-world combination of institutional factors—inflation, capital gains treatment of certain types of farm receipts, cash accounting, and abundant credit at favorable terms—caused the realized cash income portion of returns to shrink and the unrealized capital gains portion of returns to expand during the seventies. By contrast, inflation caused the actual cash expenditures portion of costs to increase and the opportunity costs portion to shrink, because opportunity costs are partially or completely offset by capital gains return to assets (11). By the midseventies, farmers and investors in farmland felt that they could benefit from continuing inflation by aggressive investment in farmland (10).

Changing Farm Returns and Asset Values

Most farm assets—73 percent on January 1, 1985—are in the form of real estate, chiefly farmland. This farmland is valued mostly by its expected return from continued use in farming (2). It is physically and economically impossible for most farmland to be converted to nonfarm use within any short period, except where urban or industrial development may be taking place.

The value of farmland adjusted to the conditions of the seventies as farmers and investors in farmland came to view it as a superior hedge against inflation. Also, by the midseventies, land had become analogous to a growth stock (27). The inflation-hedge motive attracted more nonfarm investors to the land market and induced more farmland owners to hold onto their investments. The former led to a higher demand for land and the latter to a lower supply of land offered for sale; the combination of the two raised the price of land much faster than the inflation rate throughout the seventies. And, farmers and investors were led by a long history of favorable capital gains on land investments to acquire more land and use more financial leverage.

The growth-stock characteristic of land is that its value increases because of expected future increases in returns to land ownership, exceeding that justified by current income alone. Investors in farmland, like investors in any growth stock, must be prepared to experience negative cash flows for several years. Thus, investors, farm or nonfarm, had to subsidize their land purchases from either previously owned farmland for which the net cash flow was positive or from off-farm income sources.

Given the above, the value of farmland largely reflects the expected returns (both cash returns and capital gains) from continued agricultural use of the land (27). These expectations are frequently conditioned by long-term return factors that may be unrelated to the current year's cash return to farm assets. As a consequence, owner-operators of farms are frequently caught between a cash outflow that reflects the longrun expected value of farmland and a cash inflow that reflects temporarily reduced income.

The land market is a thin market--only about 3 percent of farmland changes ownership in any year. Also, all farmland is valued on the basis of the few arm's-length sales that do occur each year. In years of favorable incomes or expectations, land prices are likely to be high; in the face of low incomes or expectations (that is, forced sales), the land market is likely to be severely depressed.

One would expect sharp declines in farmland values if expectations for future growth of farm returns were even to level off. As with any growth stock, when growth expectations decline or even taper off, its price must fall. The trend of increasing land values has changed, at least temporarily. In early 1985, the price of farmland was more than 30 percent below its 1980-81 peak and continuing to decline in many States. Land values could be expected to stabilize and begin to increase modestly if real interest rates and the value of the dollar in international exchange were to decline.

POLICY RESPONSES

The various commodity subsectors have reacted differently to the economic and institutional framework of the agricultural sector.

Commodity Policies

Producers of grains and fibers have obtained governmental stabilization and support of their prices through commodity programs providing target prices, loans, and storage facilities and payments (17, 18, 23, 30). These commodity price support programs have tended to increase the value of cropland, both by increasing the expected returns from production and from reducing their variability--especially on the down side.

Producers of fresh fruits and vegetables have reacted to intraseasonal as well as interseasonal instability of prices and to disparities in bargaining power between producers and handlers by seeking Government authority to partially regulate markets under marketing orders (16, 36, 37). Marketing orders with supply or product quality regulatory powers have increased the stability of returns, but many have not increased the longrun level of returns over what they otherwise would have been (16, 36).

Producers of processing vegetables have utilized negotiated production contracts to manage their risks and processors have used these contracts to assure timing, quality, and quantities of raw-product supplies (33). They receive some assistance through Government purchase of their products under Section 32.

Dairy farmers have obtained rigid import quotas, marketing orders, and Government support of prices to reduce the risks of cyclically unstable prices as dairy herds expand or contract. Since the national dairy herd can be expanded only by raising heifers to 24-27 months of age, milk prices could be depressed or elevated for long periods before the industry could adjust to bring supply and demand into balance (26). These programs have both increased milk supplies and increased the value of dairy production assets above what they would otherwise be.

Cattle producers have been subject to cyclical expansion and liquidation of beef herds for the last 50 years. The beef subsector has not resorted to Government assistance except import quotas and purchases of ground beef under Section 32. Instead, beef producers have used various market means to spread their risks: hedging on futures markets, spreading ownership of cattle on feed among many nonfarm investors through custom feeding, and more recently, increased contracting (33).

Poultry producers do not have Government programs to stabilize prices except purchases of canned chicken (mostly spent laying hens), turkey, and processed eggs. Consumers have benefitted from the technological and structural changes in the poultry industry--real prices of eggs and poultry meat have declined by over 75 percent since 1950. The broiler subsector is the classic case of private sector adjustment to risk (8, 33). It is almost entirely vertically integrated, with broilers owned by an individual firm (the integrator) all the way from hatchery flock to supermarket loading platform. In the grow-out phase, farm operators contract their labor and facilities to integrators and raise broilers for a contractual margin. Eggs and turkeys are not as integrated, but their organization is still highly industrialized and coordinated through contract as well as ownership integration.

Dairy farming is the least concentrated of all livestock enterprises, with the highest proportion of family-sized farms except for hog farming, where disease problems prevented the development of large specialized enterprises until recently. The stability provided by the dairy price support program is a major contributor to this lack of concentration of production. Note, however, that the real price of dairy products has not fallen the way that real prices of poultry products have. Removal of dairy supports would create pressures toward large-scale organization in dairy farming, along the lines of California and Florida dry-lot dairies, rather than the smaller landbased farms of Wisconsin and New York (5).

In beef cattle feeding and broiler, turkey, and egg production, the need to develop new ways to deal with substantial risks has led either to large-scale units, as in cattle feeding, or contractual integration, or both, as in poultry production.

A part of the adjustment to variable prices and incomes has been to move toward large-scale units--as in eggs, turkeys, fed cattle, and potatoes--which can better spread risk through marketing and financing of production.

Tax Policies

Tax policies have made farming an attractive investment for farm operators and many others (37). Table 9 shows that large farm losses are strongly correlated with large off-farm incomes, indicating a use of farm assets as tax shelters. The tax-sheltering possibilities of farm assets have raised the capital barriers to entry facing new owner-operators by:

- o Making current cash income and expenditures a downward-biased indicator of economic returns in agriculture.
- o Inflating asset values by their expected return as possible tax shelters, further depressing the apparent rates of return based on cash income and expenditures.
- o Stimulating more investment in farm assets than would otherwise be warranted, which leads to overproduction of farm products, lower farm prices, and lower rates of return from the market.
- o Encouraging farmers' investments in assets with lower effective tax rates. Since there are wide differences in effective tax rates between various classes of farm equipment and structures, investments tend to be concentrated where the tax treatment is most favorable rather than where they are economically most efficient.
- o Fostering ownership of farm assets with tax-sheltering possibilities by those who can best reap the benefits of the tax treatment of these assets. Overall rates of return remain nearly the same, but more return is realized from tax sheltering and less from the market (15).

Estate and inheritance tax policies and rules governing incorporation also influence the organization of agriculture. Several provisions of estate and gift taxes--Federal taxes on wealth transferred during life or at death--can affect the ownership of farms and the maintenance and accumulation of wealth across generations, encouraging agriculture as a potential estate tax shelter as well. Among the most important are special use valuation of farm assets and deferred payment of estate taxes. Special use valuation, within certain limits, allows farm assets to be valued on the basis of the prevailing rental rates for these assets capitalized at the Federal Land Bank interest rate. This method of valuing agricultural assets ignores several components that contribute to the fair market value of farmland: its inflation-hedging, growth-stock, and tax sheltering potentials. These components contribute up to 50 percent of the market value of farmland in some areas and at some times (7).

Deferred payment of estate taxes, with favorable interest rates on the first million dollars of taxable estate values, provides heirs with valuable financing breaks. Access to these provisions is focused toward farmers by requiring material participation and qualified use tests for eligibility (7, 21). Other institutional rules surrounding incorporation of farms, provision of fringe benefits, and liabilities for certain employment taxes, such as workers' compensation, provide significant means for farms to obtain favored tax positions (20).

ISSUES FACING FARMERS, THE INDUSTRY, AND SOCIETY

Organizational change issues of the farm sector can be viewed from three vantage points: those of farmers, agriculture as an industry, and society, on whose behalf public policies are formulated.

Farm Firm Issues

Farmers' problems are very concrete and revolve around how to enter farming, how to survive and grow, and how to pass the farm on to the next generation. Entry is made difficult by high and rising capital requirements. Rapid inflation in the seventies also created barriers to entry by stimulating even more rapid

Table 9--IRS-reported farm and off-farm income, by individuals reporting farm profits and losses, per farm, 1976

Item	Number of returns	Adjusted gross income	Farm income or loss	Off-farm income
	Thousands		Dollars	
Farm profits:				
$50,000 or more	17	81,673	74,911	8,706
$25,000 to $49,999	81	37,671	32,979	5,684
$10,000 to $24,999	231	21,196	15,624	6,110
$5,000 to $9,999	210	13,291	7,178	6,507
$2,000 to $4,999	252	11,027	3,233	8,226
$1,000 to $1,999	179	9,872	1,441	9,148
$1 to $999	358	10,512	397	10,851
All farms with profits	1,328	15,366	7,716	8,245
Farm losses:				
$50,000 or more	12	16,362	-104,448	122,080
$25,000 to $49,999	24	17,366	-33,942	51,602
$10,000 to $24,999	93	15,423	-15,154	32,348
$5,000 to $9,999	191	13,571	-6,836	20,641
$3,000 to $4,999	228	13,638	-3,842	18,151
$1 to $2,999	917	13,329	-1,184	14,864
All farms with losses	1,465	13,631	-4,568	18,669
All individuals	2,793	14,533	1,268	13,877

Source: (33), p. 84.

increase in farmland values (10, 31). A slowdown in inflation reduced farmland values during the eighties, but the long-term future trend is unclear.

Farm survival and growth are as much a matter of financial management as production or marketing management. The rapid increase in farm asset values in the seventies followed by the shocks of the early eighties established financial strategy as a key to farm growth and survival and demonstrated that a financial strategy that spells success in one economic environment can spell disaster in another. Farmers' financial growth and survival decisions center around:

- Adjusting to the economic instability of the agricultural sector—balancing income streams; utilizing public and private sector means to handle risks.
- Adjusting to the disparity between cash flows and economic returns—balancing returns from current net income and capital gains; balancing equity and credit financing to achieve growth and security.
- Adjusting to farm and nonfarm opportunities for investment and employment—balancing farm and nonfarm income sources and investments.

These financial decisions are superimposed upon day-to-day production and marketing decisions, and may be of equal or greater importance.

The third problem from the farmer's point of view is passing the farm on to the next generation—whether within the family or to a new entrant. Concern centers upon estate taxes, but most farms except the multiple-operator, larger-than-family farms can be passed to a qualified heir without being subject to a heavy estate tax burden under currant Federal law. A potentially more important problem is that of equitably sharing the estate (or the proceeds from operating it) among many nonfarm heirs. Farming and farmland ownership have traditionally returned low rates of current return and high rates of capital gains, so it is difficult for the farm-operating heirs to buy out the nonfarm heirs; but it is equally difficult for the nonfarm heirs to receive a fair share of returns without selling the land to realize the capital gains.

Industry Issues

From an industry perspective, the "one-farm, one-owner, one-operator," low-debt model of agriculture is no longer strictly applicable to farming. This type of organization dominates small farms and rural residences, but among family farms and larger farms it is becoming less true (see business organization, fig. 4; tenure, p. 36; and debt, fig. 7). With the decline of full ownership and the increased use of credit, the sector has lost some of its resilience and flexibility because every factor—land, labor, capital, management, and riskbearing—must be rewarded every year. This is far different and far less flexible than the situation of an owner-operator able to allocate an undivided margin above shortrun variable costs to the most pressing needs in any year. Decreased flexibility makes the industry less able to absorb economic or natural shocks. Its ability to cope with instability is weakened at just the time that the magnitudes and probabilities of external shocks have increased. The increased use of credit is currently the most serious of these problems.

Issues Facing Society

In an endeavor to achieve certain goals of society with respect to agriculture, such as food safety, security, abundance, and reasonable prices, policymakers face several problems. The first is that organizational change usually has been viewed as an unintended side-effect of policies designed to accomplish other ends. The United States has not had an overt farm-size policy at least since the Homestead Act. Certain programs such as land reclamation, commodity support payments, or lender-of-last-resort programs have had size limitations, but most policies are not intended to affect organization any differently than would an unassisted free market. While the intention has seemed clear, the realization has not been. Unintended organizational side-effects of policy have abounded and have been described since the thirties.

Historically, agricultural policies and programs were seen as needed to assist a chronically depressed and chronically unstable sector of the economy. They were designed accordingly, to stabilize prices and improve incomes. Programs aimed at increasing the income or wealth of farmers should address the question of whether farmers are, in fact, a disadvantaged group in society or would be, without the programs. Programs aimed at mitigating instability should be justified by the improved welfare or efficiency of a more stable industry as opposed to a less stable one.

Most farm programs distribute direct payments and benefits on the basis of output and confer indirect benefits by raising prices in the marketplace; thus both direct and indirect benefits are proportional to volume. Farm program benefits go heavily to the larger-than-family farms, which account for nearly half of production and have current incomes and net worth that are clearly above the average of the U.S. population. It has become increasingly hard to justify agricultural programs that transfer income on the basis of production volume alone, despite objectives to promote stability. Moreover, it is becoming increasingly evident that farm programs administered without due regard for the importance of nonagricultural factors will be insufficient to address the income and stability needs of a diverse U.S. farm sector.

One general relationship appears clear: While public policies may help the current group of family farms to survive, they may also hinder the long-term survival of family farming as a system. By establishing policies that are applicable to all types of ownership and operating units in farming, policies which create a favorable environment for family farms may also attract other types of farm organization, inviting nontraditional investors and new forms of farm business organizations to enter the industry. Thus, the policies may inadvertently preserve the family farm in a disadvantageous position, and may perpetuate the need for Government support.

Nevertheless, some elements of programs appear to contribute primarily to reducing price, production, and resource instability: the farmer-owned reserve for grains, nonrecourse loans at or near world price levels, crop insurance, lender-of-last-resort and economic emergency lending programs, or marketing orders for fruits, vegetables, and milk. Other elements contribute primarily to increasing the income or wealth of farmers through taxpayer transfers (such as target price programs, direct costs of dairy support purchases, and credit at subsidized rates) or at consumers' expense (such as the indirect costs of dairy support purchases, or tobacco and peanut quotas). The total budgetary costs for income transfer programs greatly exceed the costs of programs aimed at controlling or coping with instability in agricultural markets.

SUMMARY

Major changes in the organization of farming since World War II have called into question the rationale for farm programs used since the thirties. In the depths of the Depression, the decision was made to help all farmers without regard to their size by raising prices through restrictions on production. The need for more stability was also recognized; however, the emphasis was on income enhancement from Depression levels.

In the sixties and seventies, deficiency payments (direct payments to farmers) were introduced to partially separate income enhancement from price enhancement. Deficiency payments, based on volume of production, help large farmers more than smaller farmers.

The evidence points overwhelmingly to major changes in the physical, financial, and institutional organization of farming since World War II. Farm numbers declined until the late seventies and number 2.3 million today. The concentration of production has increased sharply. The largest 5 percent of farms produce 50 percent of output in the eighties compared to 42 percent in 1960. The share of sales by farms with sales of $500,000 or more doubled from 15 percent in 1960 to 30 percent in the eighties.

The decline in farm numbers is almost entirely among those with sales of less than $40,000 per year. The smallest farms have become mostly rural residences with substantial off-farm income offsetting paper or tax losses on minor farming operations. The tax-sheltering possibilities of farm assets have made it more difficult for new people to enter farming and have put more emphasis on tax treatment of assets than on making the most efficient investment.

Changes in technology and specialization of production have encouraged the formation of very large, highly capitalized farms, and very small, part-time farms. This has left the middle of the size distribution--small family farms--too large to allow full-time, off-farm employment and too small to yield an adequate income from farming.

With increasing mechanization, farms must be larger to fully employ farmers and their families--up to 80 percent larger in 1982 than in 1960. This created pressure for farms to grow larger and drove up land prices in the sixties and seventies.

Farmers made substantial paper returns from the increasing value of farmland, providing a basis for loans to buy more farmland and newer machinery, and for farm operation. In the eighties, farmland values have fallen at a time when need for credit has increased for many farmers. As farmers borrow more and their cushion of equity decreases, they are increasingly vulnerable to income swings. Over 30 percent of farms with sales between $50,000 and $500,000 have debt/asset ratios in excess of 40 percent which could bring them to the point of forced liquidation with a few years of poor returns. Nearly 14 percent of these farms with sales of over $50,000 have debt/asset ratios in the extreme danger zone of 70 percent or more, as of January 1985.

Farm income was quite stable in the fifties and sixties, but since 1972 it has been extremely variable. A substantial portion of the underlying instability arises from natural variation in production, much of it weather-related. Another substantial and increasingly important portion is due to increased reliance on export markets for crops. The demand for U.S. agricultural products in the rest of the world is highly variable, especially when large international customers alter their trade practices and policies. Instability is much greater than it was in the fifties and sixties; the role of public programs in providing a measure of income stability is a more important continuing rationale for public farm programs than is low incomes among farm operators.

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ALTERNATIVE POLICY TOOLS FOR U.S. AGRICULTURE

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Foreword

This document summarizes policy tools in U.S. agriculture. In the past 50 years, since the Agricultural Adjustment Act of 1933, a wide array of farm programs has evolved. It is important for the public to recognize that, due to numerous factors, wide variations in agricultural production create income instability for farmers and ranchers as well as uncertainty in supplies and prices for processors and consumers. Consequently, farm policy is an important function for the U.S. government. Individually, farmers and ranchers are not able to control the numerous variables that affect agriculture. The form and degree of government involvement in policy is the subject of considerable debate.

In this document, government policy tools impacting agriculture are individually reviewed, with regard to implementation, procedures, and the impacts on prices and supplies. The purpose is not to advocate particular farm programs or policies, but rather to summarize the array of techniques and methods which have been utilized or considered for improving economic equity and stability in agriculture. This publication should be a useful guide and reference for those individuals or organizations involved in agricultural and food policy development, for those considering the broader domestic and international dimensions for U.S. agriculture, or for those who are interested in the alternatives that could be used singularly or combined.

Keywords: Domestic Farm Policy, Commodity Programs, International Trade Policy, Market Development Programs

Introduction

Agricultural policy is a broad term used to encompass government programs that directly affect the prices and incomes received by farmers. In developing agricultural policy, producers and agribusiness leaders, their organizations, and government policy makers must sort through a myriad of potential policy tools.

Each policy tool or government program is intended to deal with a specific farm problem in a specific way. For example, target prices raise farm income through direct payments from the government while support prices raise income by setting a floor on market prices. Some policy tools are more effective than others in accomplishing the objectives for which they are intended. For example, quotas that dictate the volume a producer can market are more efficient than acreage reduction programs in controlling production. Often policy tools have side effects that need to be considered before selections are made. For example, when price supports are set above world market prices, exports fall.

This publication provides descriptions of individual policy tools that most directly affect agriculture. The report is designed to be a comprehensive list of those policy tools that are used currently, have been used in the past, are used in other countries, or have been proposed for use in the United States. These tools are divided into four general categories:

- **Domestic farm programs** -- designed to raise or stabilize farm prices and incomes.

- **International trade policies** -- designed to create a more favorable trading environment for farm products.

- **Marketing programs** -- designed to improve farmers' position in domestic and foreign markets.

- **General economic policy tools,** that have had a significant impact on the prices received and paid by farmers.

A single-page summary describes each policy tool with respect to the following:

- The policy area in which the tool falls.
- What the policy tool is.
- The primary objective of its use.
- When it has been used.
- Experience with its use.
- Consequences of its use.

The following publications offer comprehensive discussions of the policies described here.

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DOMESTIC FARM PROGRAMS

Policy Tool:	**Marketing Quotas (and Certificates)**
Policy Area:	**Domestic Farm Policy, Supply Control**
What It Is:	A marketing quota is a mandatory mechanism which determines the quantity of a commodity that can be marketed. The national quota, set by the Secretary of Agriculture, is based on expected domestic and export demands. It is usually below normal production levels but high enough to satisfy the Secretary's estimate of expected market needs. Each producer is given a portion of the national quota based on his past production. Marketing quotas are the most effective means of controlling production.
Objective:	To restrict production by controlling the quantity farmers are allowed to market.
When Used:	Since marketing quotas are mandatory for all producers growing the quota crop, a two-thirds majority of farmers voting in a referendum must approve the quota. Once approved, the quota is effective for only one crop year. To be continued for a second year, it must be approved, in a second referendum. Farmers historically have approved a quota only when a crisis existed. Quotas are generally used in conjunction with relatively high price supports to encourage producer acceptance. Marketing quotas have been used regularly for peanuts and tobacco.
Experience:	Marketing quotas have effectively reduced production and stock levels but only when the national quota was set at levels consistent with demand at politically acceptable prices.
Consequences:	● Once a quota is in place, there is pressure to increase the national quota, thus conteracting its purpose. ● Like other supply control programs, marketing quotas usually reduce the volume of exports for the quota crop. ● Marketing quotas are more efficient in reducing supply and raising price than acreage reduction programs because there is almost zero slippage. (Slippage is that portion of reduced acreage which does not result in correspondingly lower production; e.g., due to removing the poorest land.) ● Marketing quotas are associated with low treasury costs unless the quota is so high that CCC stocks accumulate. ● Because of the annual referendum requirement, marketing quotas create uncertainty for producers. This could be changed by legislative action making quotas effective for 4 years. ● Marketing quotas tied to a land base tend to be capitalized into the land and result in increased land prices. ● Single crop marketing quotas for major crops (e.g., wheat) adversely affect prices of crops planted on the idled acres (e.g., corn and sorghum). ● Increased prices for commodities increase cost of production for livestock producers and food prices over time.

Policy Tool: **Acreage Reduction (Set-Aside and Diversion)**

Policy Area: **Domestic Farm Policy, Supply Control**

What It Is: Acreage reduction consists of an acreage set-aside and/or acreage diversion that is generally voluntary. Acreage set-aside programs require that participating farmers idle a percentage of their crop base acres to be eligible for other program benefits, while acreage diversion programs pay producers a given amount per acre to idle a percentage of their base acres. A farmer's base acres are determined by the production history of the crop.

Objective: To reduce the quantity produced and thus the supply of a given commodity.

When Used: Acreage set-asides and diversions were used extensively during the 1960s and intermittently since 1977. These programs are generally used when prices are depressed due to a build-up of stocks.

Experience: Acreage reduction programs have been only modestly effective in reducing supply over the long run. These programs have usually been used when high loan rates, or target prices, or even temporarily high market prices encourage producers to increase production. Except for cotton and rice, acreage reduction programs have usually had relatively low producer participation. To encourage participation, diversion payments to supplement other farm program benefits may be added.

Consequences:

- To the extent that they reduce production, acreage reduction programs reduce supply, stocks, and raise prices domestically.
- Effective acreage reduction programs reduce the volume of supply available for export.
- Slippage, reduces the effectiveness of the program.
- Diversion programs can result in large treasury outlays.
- Payment limitations and offsetting compliance discourage participation by large-scale operators who farm large acreages for several landlords.
- Failure to require cross compliance encourages producers to participate for one crop but not for others--reducing the effectiveness of the overall program.
- Benefits from acreage reduction programs get bid into the price of land.
- Acreage reduction programs tend to restrict ability of farmers to shift acreage in response to changes in relative crop prices.
- Increased prices for commodities increase cost of production for livestock producers and food prices over time.

Policy Tool:	**Long-Term Land Retirement**
Policy Area:	**Domestic Farm Policy, Supply Control**
What It Is:	Long-term land retirement is a multiple year voluntary program that removes cropland from the production of farm commodities.
Objective:	To remove from production cropland that is devoted to crops in surplus or is subject to erosion.
When Used:	The program was first authorized in the Agricultural Act of 1956 as the Soil Bank program. In 1965 Congress re-established a land retirement program and called it the Cropland Adjustment Program. Funding was authorized for continuation of a long-term land retirement program in 1970. Land retirement is acceptable to consumers and producers only when surplus stocks and low prices are a chronic problem. If needed, the land can readily be put back into production, as it was in the early 1970s.
Experience:	Land retirement programs removed large quantities of cropland from production in the Great Plains. Cropland under long-term agreement was put into a conserving use (usually grassland) and was considered a national food reserve. Only the least productive lands were enrolled in the program. Because of the regional concentration of enrollment, the program was blamed for the demise of numerous rural communities. Sealed bids for long-term land retirement can be used to remove cropland from production without over- or under-paying operators to remove their land.
Consequences:	● Long-term land retirement is a supply control and conservation strategy that costs less than paying storage and interest for grains already produced. ● Long-term land retirement programs can adversely affect local agribusiness and rural communities. ● Treasury costs are lower than they would be for annual diversion of the same acreage for the same number of years. ● Increased prices for commodities increase production costs for livestock producers and food prices over time. ● Land retirement can be used to encourage conservation of cropland and enhance wildlife preservation practices. ● Long-term land retirement reduces farmers' flexibility. ● Retired land, properly cared for, results in greater productivity when put back into use, thus possibly exacerbating the excess supply problem. ● Slippage is generally high because least productive land is removed from production. Slippage may be reduced somewhat if whole farms are removed from production.

Policy Tool: **Acreage Allotment**

Policy Area: **Domestic Farm Policy, Supply Control**

What It Is: Acreage allotment is a mandatory mechanism to reduce quantity supplied. Acreage allotments require that producers plant within a specified amount of land. The number of allotment acres for each farmer is set at a given percentage of the farmer's production history. The percentage is set to achieve the desired reduction in production and thus in quantity supplied.

Objective: To reduce the quantity produced and thus the supply of a given commodity.

When Used: Acreage allotments were used extensively during the 1950s and 1960s for the basic commodities. Allotments still exist in tobacco and for peanuts eligible for price supports. Allotments have also been used as a means of allocating target price benefits (e.g., with rice from 1976 through 1981).

Experience: When acreage allotments were used alone (in the absence of marketing quotas) farmers responded by farming the allotment acres more intensely, thus raising yields. The result was a tendency for production to return to pre-allotment levels, therefore necessitating further restrictions on allotment size. In some commodities, such as tobacco, marketing quotas were imposed to obtain firmer control over production.

Consequences:

- Acreage allotments raise domestic prices by reducing production and supply.
- Benefits from acreage allotment programs are bid into the price of land and/or allotments.
- Acreage allotments restrict ability of farmers to shift acreage in response to changes in relative crop prices.
- When allotments are imposed on one crop, surpluses tend to arise in other crops as farmers utilize non-allotment acres to produce those other crops. Thus allotments are often imposed on those additional crops.

Policy Tool:	**Payment in Kind (PIK)**
Policy Area:	**Domestic Farm Policy, Supply Control**
What It Is:	Payment in kind is an acreage diversion program with the diversion payment in commodity rather than in cash.
Objective:	To reduce both production and stocks of grains in the farmer owned reserve and cotton in the CCC loan.
When Used:	Payment in kind was used in the early 1960s for one year; in 1983 for wheat, cotton, corn, sorghum, and rice; and again in 1984 for wheat. The program has been used when government controlled stocks reach such unacceptably high levels that a PIK program is feasible.
Experience:	PIK is one way to reduce stocks controlled by the government and to move these stocks out of government storage. The result is an overall reduction in stocks and an increase in domestic prices. Problems occur when the government is required to pay out more PIK commodity than it owns, as was the case for cotton and rice in 1983. A decision that PIK commodities were not subject to the payment limit encouraged large volume producer participation. Question remains, however, regarding the legality of this decision.
Consequences:	● PIK provides an off-budget method for paying producers to divert cropland. ● PIK increases domestic prices and food costs while reducing stocks. ● PIK helps maintain market supplies while curtailing production which results in a price stabilizing effect. ● Program effectiveness in increasing prices depends on farmer participation, slippage, and initial level of stocks. ● PIK reduces the supply available for export. ● Local communities, agribusiness firms, and livestock producers are adversely affected if signup is high. ● Instead of adjusting excess resources out of crop production, PIK's artificially high prices may actually encourage them to stay.

Policy Tool: **Commodity Credit Corporation (CCC) Loan**

Policy Area: **Domestic Farm Policy, Price Stabilization**

What It Is: The Commodity Credit Corporation (CCC) makes nonrecourse loans at established loan rates to farmers for wheat, feed grains, cotton, sugar, wool, tobacco, and honey. The loan, plus interest and storage, can be repaid within 9 to 12 months and the commodity sold on the cash market. If it is not profitable for the farmer to repay the loan even after 9 to 12 months, the CCC accepts the commodity in full payment of the loan. Commodity loans are frequently referred to as a price support since national season average prices generally do not fall below the loan rate. Local prices, on the other hand, can fall below the loan for part of the marketing year.

Objective: To add price stability to the market by releasing CCC stocks when prices were high and withdrawing stocks from the market when prices were low. A second objective was to encourage orderly marketing of commodities throughout the marketing year by preventing a market glut at harvest.

When Used: The CCC loan program has existed continuously since 1938 for cotton, wheat, and feedgrains. During World War II, the loan rates for basic commodities were set at 100 percent of parity to encourage production of crops already in surplus and to encourage exports. In other years, the loan rates were set low to avoid encouraging production.

Experience: CCC loans were effective at stabilizing prices of feed grains during the 1960s when the price of corn was bounded by the loan rate and the CCC release price (110 percent of loan). At various times political pressure has caused loan rates to be set above equilibrium market prices; as a result (a) the loan rates acted as a supply incentive for producers, (b) the CCC acquired large stocks of grains and cotton, and (c) the volume of exports declined as commodities were priced out of the world market.

Consequences:

- Loan rates with reasonable release levels act as a price stabilizing force in the market and thus reduce price risk for producers and lead to greater production.
- The CCC loan program extends the marketing period for producers 9 to 12 months.
- The CCC loan reduces price risk for farmers thus encouraging excess resources to remain in agriculture.
- High loan rates can effectively price our commodities out of the world market necessitating an export subsidy or direct aid to export surplus CCC stocks.
- Loan rates based on the cost of production tend to increase without regard to the marketing clearing price and thus can become a production incentive.

Policy Tool: **Farmer Owned Reserve (FOR)**

Policy Area: **Domestic Farm Policy, Price Stabilization**

What It Is: The farmer owned reserve is a 3-year CCC loan for wheat and feed grains. The Food and Agriculture Act of 1977 established the FOR as a 3-year extension of the CCC loan after grain had been in the regular loan for 9 months. Reserve stocks remain in the producers hands until the Secretary of Agriculture authorizes release.

Objective: To stabilize grain prices and provide producers a longer time period to sell their grain. A secondary objective was to establish a food reserve of grains, thus stabilizing grain supplies and making the United States a more dependable supplier.

When Used: The FOR has been in use since 1978 for wheat and feedgrains. The program was modified in 1980 to allow direct entry, thus avoiding the 9 months in the regular CCC loan. In addition, producers were given a direct entry loan price higher than the regular loan rate in 1980, 1981, and 1982. Stocks in the reserve are eligible for release when cash prices reach a level determined in advance by the Secretary of Agriculture.

Experience: The FOR attracts large quantities of stocks when the entry price is set above the equilibrium market price. Since its inception in 1977, corn prices have reached the FOR release level twice. When that happened corn stocks were released and prices stabilized at the release level. Research has shown that the FOR reduces the quantity of stocks held by the private sector and causes season average prices to be at either the entry price or the release price depending on the supply-demand balance.

Consequences:

- FOR often results in the accumulation of stocks resulting in substantial storage and interest costs.
- FOR provides farmers 3 years to sell their grain out of the reserve at the release level price.
- Political pressure groups attempt to set the FOR entry price above equilibrium market price, thus creating, in effect, an income support program.
- In the face of declining export demand, there are no provisions to reduce the FOR entry or release price.
- FOR works best when there is a relative supply-demand balance, thus allowing prices to move in a range between the entry loan rate and the release price.
- High loan levels and release prices encourage foreign production and discourage U.S. exports.
- FOR supports prices only when producer participation is high and adequate storage is available.

Policy Tool:	**Target Prices and Deficiency Payments**
Policy Area:	**Domestic Farm Policy, Income Support**
What It Is:	Deficiency payments are paid to farmers to make up the difference between a price determined to achieve a politically acceptable income level (target price) and the average market price. Deficiency payments are made on each farm's actual production acres and farm program yield. The farm program yield is based on each farm's yield history. Target prices were set initially to reflect an average cost of production.
Objective:	Deficiency payments were initiated to raise and stabilize farmer incomes to the level of the nonfarm popuation, while allowing farm prices to be competitive in the export market.
When Used:	Target prices were authorized for cotton in 1970 and for cotton, wheat, corn, sorghum, and oats in the Agriculture and Consumer Protection Act of 1973. Deficiency payments are paid for wheat and feed grains if the average cash price in the first 5 months of the marketing year is less than the target price. In the case of cotton, the deficiency payments are made if the average cash price for the calendar year is less than the target price. The payment rate is the difference between the target price and the relevant average price received by farmers or the target price and the loan rate, whichever is smaller.
Experience:	Initially, target prices were set to reflect changes in the cost of production and yield. Much debate ensued over what constituted the cost of production. A 1977 change in the target price formula removed the possibility of reducing target prices to reflect yield increases. The 1981 farm program set target prices for cotton, wheat, and corn for 1982-85 without regard to inflation, crop yields, or production costs. Excess production and high government costs resulted.
Consequences:	• Target prices set above market clearing levels stimulate production, reduce market prices, and thereby reduce food costs. • By reducing market prices, target prices allow U. S. farm products to be more competitive in the world market while supporting farm income, e.g., an implicit export subsidy. This gives them a major advantage over support prices for raising producer income. • Arbitrarily setting target prices above the expected market price can result in large treasury outlays. • Deficiency payments provide income support up to $50,000 to large-scale producers and little support to small-scale operators because payments are based on production. • Deficiency payments reduce income risk for producers and increase their ability to obtain financing.

Policy Tool: **Disaster Program**

Policy Area: **Domestic Farm Policy, Income Support**

What It Is: Low yield and prevented plantings payments are paid to producers who, through no fault of their own, are unable to plant their crop or harvest a normal yield.

Objective: To reduce yield and planting risk faced by producers by providing them a relatively free (program compliance necessary) crop insurance program.

When Used: Disaster payments were first authorized by the Agriculture and Consumer Protection Act of 1973. Disaster payment benefits were available from 1973 to 1981 to producers who were in compliance with other program provisions. Low yield payments were made to producers who were prevented from harvesting less than 66 percent (75 percent for cotton) of their normal yield. The provisions of the disaster program were dropped in 1982 to reduce government costs and encourage participation in the FCIC all-risk crop insurance.

Experience: The disaster programs were very expensive and encouraged expanded production of crops in high risk areas. Low yield and prevented plantings payments were received mainly by dryland producers in the Great Plains and producers in the Delta States.

Consequences:

- High treasury costs were associated with disaster programs.
- Disaster programs provided producers income assistance when they needed it the most, namely, after a natural disaster.
- Availability of the disaster program increased producer participation in voluntary acreage reduction programs.
- Disaster programs encouraged the production of high risk crops in low rainfall and floodplain areas and the use of marginally productive land.
- In latter years, disaster payments were subject to a $100,000 payment limitation, thus discouraging program participation by large-scale operators.
- Benefits from the program were bid into the market value of marginally productive, high-risk cropland.

Policy Tool:	**Federal All Risk Crop Insurance (FCIC)**
Policy Area:	**Domestic Farm Policy, Income Support**
What It Is:	Federal all risk crop insurance is a subsidized low-yield insurance program for farmers.
Objective:	To provide federally subsidized crop insurance to producers unable to obtain adequate crop insurance on their own; also to replace the low-yield and prevented plantings disaster program for grains and cotton with an insurance program available to all producers of major crops.
When Used:	FCIC for wheat was first authorized under the 1938 Federal Crop Insurance Act. Federal crop insurance was available only for wheat from 1938 through 1941 when it was expanded to cotton. The program was suspended in 1943 because of low producer participation but revived in 1945 with a reduction in counties insured. After 1948 the program was extended to more counties and crops, including vegetables and fruits. The program was substantially modified in a 1980 farm bill to provide a 30-percent federal cost subsidy. In 1981 the program was expanded to all counties in the United States and to most major crops.
Experience:	Federal crop insurance has not garnered high levels of producer participation. Participation has been the highest in high-risk, nonirrigated, low-rainfall areas. Problems have been encountered in developing an actuarially sound premium structure and in adequately marketing the program to producers. Experience indicates FCIC has a high cost of administration relative to commercial insurance.
Consequences:	• Limited acceptance by farmers leads to adverse loss experience. • Low participation by producers results in high loss ratios and high treasury costs. • The program provides more extensive coverage than commercial hail insurance at subsidized rates. • High premiums discourage widespread producer participation and low participation requires high premiums to make the program actuarially sound.

Policy Tool: **Income Insurance**

Policy Area: **Domestic Farm Policy, Income Support**

What It Is: Income insurance would be an expansion of the FCIC all-risk crop insurance. It would insure both a producer's yield and price risk; i.e., total crop receipts.

Objective: To stabilize farm incomes from the adverse effects of natural disasters and low prices and thus replace all supply control and price support programs with a comprehensive farm income insurance program.

When Used: An income insurance program for farmers has not been used in the United States. The 1981 farm program authorized an investigation into the feasibility of a federally subsidized income insurance program for farmers.

Experience: None

Consequences:

- An actuarially sound farm income insurance program may reduce current treasury outlays.
- Producers' premiums would likely be unacceptably high, and since the policy replaces a "free" risk protection program, producers would likely oppose the program.
- Participation by farmers would likely be very low, as is the case with federal crop insurance.
- Political pressure to reduce premiums below their actuarially sound levels would be substantial. Premiums set too low would lead to excessive government costs and could cause the program to act as a supply incentive even in the face of surpluses.
- The program is flexible enough to be used for both expanding and contracting supplies and for shifting production (acreage) from one crop to another.
- The program would discourage production in high risk areas.
- Research indicates that the high correlation between crop prices and yields among regions would cause the program to fail since losses caused by either low yields or low prices would be widespread and catastrophic for the treasury.

Policy Tool:	**Cost Sharing Programs**
Policy Area:	**Domestic Farm Policy, Income Support**
What It Is:	A cost-sharing program is a means by which the costs of farm programs are shared between producers and the government. The producers' share of the cost is covered through a checkoff per unit of product marketed. The magnitude of the checkoff per unit depends on the degree of cost sharing -- 50-percent cost sharing would involve a higher checkoff than if producers shared only 30 percent of the cost -- and the size of the commodity surplus. The higher the checkoff, the lower the effective level of price support for the commodity.
Objective:	To make the level of income support more responsive to the magnitude of the surplus and to help defray a portion of government program costs.
When Used:	The 1981 farm bill provided a cost sharing program for tobacco. A 1982 farm bill amendment provided for a cost sharing program in dairy. Cost sharing programs were implemented for both tobacco and milk, but only after a serious political threat that the whole government price support program for these commodities might be withdrawn.
Experience:	It is too early to tell how either program is working. Producer resistance has been substantial to the "tax" under each program. However, with high government costs for virtually all commodity programs, producer cost sharing could be a required feature of all future farm policy legislation.
Consequences:	• The checkoff provides an automatic adjustment of the level of income support for farmers as government expenditures rise. • The political hassle of adjusting income support downward when supports are initially set too high is avoided. • The checkoff reduces government costs and, thereby, increases the political acceptability of farm programs by urban congressmen and taxpayers. • The checkoff makes the level of income support more responsive to market forces.

INTERNATIONAL TRADE

Policy Tool: **GATT (General Agreement on Tariffs and Trade)**

Policy Area: **International Trade, Trade Barrier Reduction**

What It Is: GATT is a multilateral United Nations treaty among more than 80 governments, including the United States. GATT contains a code of principles and provides a forum for consultation and dispute settlement. Five principles govern GATT:

1. Trade must be nondiscriminatory.
2. Domestic industries should be protected mainly by tariffs as opposed to nontariff barriers (quotas).
3. Tariffs agreed upon are binding, with provision for compensation if violated.
4. Consultations are provided to settle disputes.
5. GATT procedures may be waived on agreement of the members with provision for compensation. Barriers in existence when GATT was established are legal until negotiated away.

Objective: To liberalize and expand trade among nations through negotiated reductions in trade barriers. These actions are designed to prevent the development of rounds of retaliatory trade barriers.

When Used: GATT came into existence after World War II. Trade barrier reductions have been accomplished in three rounds of negotiation -- the Dillon Round (1960-61), which provided assured European Economic Community (EEC) duty-free entrance for soybeans and cotton; the Kennedy Round (1963-67), which resulted in tariff reductions on a wide range of farm products; and the Tokyo Round (1973-79), which reduced nontariff barriers on a limited number of commodities.

Experience: While experiencing substantial initial success, the most difficult problems that remain in securing trade barrier reductions are those rooted in the domestic farm policies of the participating countries. Classic examples include the EEC Common Agricultural Policy (CAP) and U.S. price supports for dairy products.

Consequences:

- GATT increased overall trade among nations, thus expanding opportunities for exports.
- GATT provides a forum for settling disputes.
- GATT establishes a code of fair trade.
- GATT restricts the latitude of the participating countries in subsidizing exports and engaging in other practices. Thus in the short run GATT places participants at a disadvantage.
- It is hard to enforce the GATT principles against the major country members.

Policy Tool:	**Monetary Export Subsidies**
Policy Area:	**International Trade, Export Subsidies**
What It Is:	Monetary subsidies to exporters are direct dollar subsidies per unit of commodity sold.
Objective:	To make the U.S. commodity price competitive in the world market and thus expand markets.
When Used:	Export subsidies are necessary to export agricultural commodities when U.S. price supports are above world prices. Overt monetary subsidies of exports are seldom made because they clearly violate the provisions of GATT. Under those provisions the United States could be required to pay damages to the countries injured by such subsidies. EEC subsidies do not violate GATT since they were in place as a part of the Common Agricultural Policy at the time GATT was negotiated. The last major U.S. direct monetary export subsidy was in the 1972 Russian grain deal when a subsidy of approximately $.60 per bushel of wheat was provided. Political considerations are obviously involved in the use of such subsidies.
Experience:	Export subsidies are overt methods of subsidizing exports. As such, they are readily determined to be a violation of GATT and invite retaliation from competitors if they increase market share. There is more pressure to use export subsidies when the dollar is overvalued with respect to other currencies.
Consequences:	• The effective export price is lowered to make U.S. commodity prices competitive in the world market. The result is to expand exports. • Monetary subsidies run a high risk of inviting retaliation. • Monetary subsidies run a high risk of violating GATT. • CCC stocks are reduced. • Long-run price relief is provided for U.S. producers in the face of low world prices. • Monetary subsidies can be expensive in terms of both money and image.

Policy Tool: **Two-Price Plan**

Policy Area: **International Trade, Export Subsidies**

What It Is: A two-price plan discriminates between the domestic and the foreign market by charging a higher price for domestic sales than for foreign sales. Exports are, therefore, indirectly subsidized by the higher domestic price.

Objective: To raise the level of producer returns while preventing the accumulation of large surplus commodity stocks.

When Used: Before World War II and the negotiation of GATT, two-price plans were used extensively to support farm income. Since the negotiation of GATT, the operation of two-price plans has been restricted largely to marketing orders.

Experience: Two-price plans, in essence, make the world market a residual and largely unprofitable market. Advocating reduced trade barriers and operating two-price plans are obviously inconsistant.

Consequences:

- Producer income increases if the demand in the domestic market is more price responsive than in the export market.
- Surplus stocks do not accumulate in the face of high domestic price supports.
- Lower export market prices create the potential for price warring conditions.
- The world market tends to become unprofitable when two-price plans are used extensively.
- Controversial method of being competitive would draw public media attention.
- Domestic market is placed at a disadvantage relative to the foreign buyers.
- In the case of cotton the use of man-made fibers is encouraged.
- Imported textiles are made even more competitive with domestic production.
- Feed grain costs are increased to livestock producers and food costs are increased to consumers.

Policy Tool: **Blended Credit**

Policy Area: **International Trade, Export Subsidies**

What It Is: Blended credit is a form of export subsidy which combines government export credit and credit guarantees with commercial credit in a single package to reduce the effective interest rate. Government export credit is provided in a program known as GSM-5. The credit guarantee program is known as GSM-102.

Objective: To make U.S. credit terms competitive with those offered by other exporting countries.

When Used: Blended credit is available only when appropriations are provided by the Congress. Tight budgets have made blended credit available only to a limited number of countries and commodities. Countries are selected based on magnitude of surpluses and competitive need, as well as on diplomatic and domestic political considerations. The blended credit program was most recently initiated in October 1982.

Experience: During the period used, blended credit facilitated the opening of markets for U.S. commodities in competition with other countries. It is particularly useful for those developing country markets where credit and credit guarantees are critical. The pressure for a blended credit program increases when a strong dollar reduces exports.

Consequences:

- The United States is made more competitive in the face of other countries' subsidized export credit programs.
- A basis is provided for penetrating new export markets -- particularly in developing country markets.
- Compared to other forms of export subsidies, blended credit runs less risk of creating retaliatory trade war conditions.
- Expansion of subsidized credit encourages other countries to expand their programs, thus creating the potential for larger programs (treasury costs) over time.
- The potential for high government costs is created by blended credit programs.
- If successful in expanding exports, blended credit raises domestic food costs and production costs for livestock producers.

Policy Tool: **P.L. 480 (Food for Peace)**

Policy Area: **International Trade, Export Subsidies**

What It Is: Public Law 480 provides for concessional sales of commodities involving price or credit terms that contain substantial U.S. subsidies. Exports are made under three P.L. 480 programs:

- Title I involves sales for dollars under low interest rates with up to 40 years repayment.
- Title II involves emergency food relief directed to nutritionally vulnerable groups.
- Title III involves commodity aid as part of a development package. Multiyear commitments are tied to specific development actions.

Objective: To dispose of surplus commodities, develop markets, provide emergency food aid, and assist friendly nations in development.

When Used: Authorized by the Agricultural Trade Development Act of 1954, P.L. 480 was used to export as much as one-third of export sales during the 1950s and 1960s when loan rates were generally maintained above world prices. Since then P.L. 480 sales have generally been in the $1-2 billion range. Countries are selected for assistance based on diplomatic and political considerations as well as need. Commodities selected are influenced by the magnitude of surplus stocks. The Secretary of State makes the final decision on who gets P.L. 480 aid.

Experience: P.L. 480 is credited with having built such important commercial markets for farm products as Japan, South Korea, Taiwan, Brazil, and Spain. The need to get commodities moving through P.L. 480 is frequently frustrated by foreign policy considerations. Title III aid is considered by recipients to be worth 10 cents on the dollar, thus an economically inefficient method to provide aid.

Consequences:

- A government alternative is provided for exports when the United States is priced out of the world market.
- Commodity aid is combined with development assistance thus being more politically acceptable.
- Government stocks of commodities are reduced.
- Long-term development of markets is promoted.
- If used extensively, it becomes too costly and the U.S. is subject to the charge of dumping commodities on the world market.
- P.L. 480 provides the State Department with a diplomatic tool that can be used in foreign policy negotiations.
- P.L. 480 sales may displace commercial sales.
- Too much commodity aid can be a disincentive for production in developing countries and can make them overly dependent on imports.
- Hunger and starvation assistance is provided.

Policy Tool:	**Export PIK (Payment in Kind)**
Policy Area:	**International Trade, Export Subsidies**
What It Is:	Under export PIK, the government provides an in-kind export commodity bonus in return for a regular commercial purchase of an agreed upon magnitude. For example, if a country purchases a million metric tons of wheat, it might receive an additional 100,000 metric tons of PIK wheat from CCC stocks. The 100,000 metric ton bonus is the export PIK.
Objective:	To make the United States commodity price competitive in the world market and thus expand export markets.
When Used:	Export PIK was first used in a 1983 flour sale to Egypt. Legislation is currently pending in Congress that would make export PIK a more permanent part of U.S. international trade policy. Export PIK would be available only to a limited number of countries and for a limited number of commodities that are in surplus.
Experience:	Export PIK was used to virtually capture the 1983 Egyptian flour market for the United States. Other flour exporting countries, such as France, were upset, although no overt retaliatory steps were taken against the United States.
Consequences:	● The United States is kept competitive in the world market, even in the face of reduced demand and loan rates that may be above the world market. ● Export PIK is less overt than direct monetary export subsidies and thus not as likely to invite either retaliation or GATT sanction. ● Government stocks of commodities are reduced. ● An export alternative is provided by export PIK as long as the CCC owns sufficient stocks. ● Export PIK is a violation of at least the spirit of GATT.

Policy Tool: **Import Quotas**

Policy Area: **International Trade, Quotas**

What It Is: Import quotas are quantity limits placed on the amount of individual commodities that can be imported into the United States. Limits are generally allocated among potential importing countries. Specific limits are frequently negotiated in the form of voluntary restraints to avoid more restrictive limits. The specific size of quotas may be either legislated, negotiated, or determined by executive action. Those determined by executive action under Section 22 as interfering with the operation of the price support program are recommended by the International Trade Commission and are imposed by the President.

Objective: To prevent unrestricted quantities of certain commodities from entering the United States and unduly suppressing prices or interfering with the operation of the price support program.

When Used: Beef import quotas have been mandated by the Congress. Cheese import quotas imposed to protect the price support program established in 1949 have been the subject of negotiation and agreement under GATT. Import quotas are also imposed on sugar under Section 22. Import quotas exist on textile imports as a means of avoiding irreparable harm to the domestic industry.

Experience: The imposition of import quotas is highly political. Even though the International Trade Commission recommendations to the President are based on objective criteria, the ultimate Presidential decision is highly political. The existence of U.S. import quotas has made it difficult to get other countries to reduce trade barriers. Japan argues that its beef import quotas are no different from the beef import quotas of the United States.

Consequences:

- Import quotas restrict available supplies and raise domestic prices.
- Textile import restrictions reduce export demand for U.S. cotton lint but may increase sales of domestic mills. Less overall demand is likely because of higher ultimate consumer product prices.
- Without import quotas on price supported commodities, the CCC would acquire a larger quantity of commodities under the price support program.
- Import quotas result in windfall profits to licensed importers.
- Supply control aspects of import quotas result in greater price fluctuations than would occur in a free market.
- Efficiency of production plays no role in determining competitiveness under a system of quotas.

Policy Tool: **Export Embargoes**

Policy Area: **International Trade, Embargoes**

What It Is: Export embargoes set absolute limits on quantities that can be exported. An export embargo does not have to involve zero exports. It may state, for example, that up to 8 million metric tons (MMT) of grain may be exported. At 8 MMT the embargo goes into effect. Embargoes may be either general and apply to all countries or specific and apply to only one country. They may apply to one commodity or to all commodities.

Objective:

- To hold down U.S. commodity prices,
- To prevent shortages of commodities,
- To achieve a foreign policy objective, or
- Any combination of the above.

When Used: Since 1970 export embargoes have been imposed three times:

- In 1973 an embargo was placed on the export of soybeans to provide assurance that poultry and hog producers would have a sufficient supply of soybean meal to continue efficient production.
- In 1975 an embargo was placed on exports of grain sales to the Soviet Union after concern spread about increasing food prices and the rumor that bread prices would rise to $1 per loaf.
- In January 1980 an embargo was placed on all exports to the Soviet Union after the Soviet invasion of Afghanistan and the subsequent tensions in Poland. This embargo was not lifted until April 1981.

Provisions of the 1981 Farm Bill require that the loan rates for grain and cotton be set at 100 percent of parity if only agricultural exports are embargoed.

Experience: Embargoes have been a major factor in reduced confidence in the United States as a dependable supplier. Therefore, the U.S. share of world trade has declined. Serious questions also exist concerning the effectiveness of embargoes as a policy tool or the willingness of the United States to enforce an embargo.

Consequences:

- Embargoes reduce U.S. export sales and lower prices.
- Embargoes reduce confidence in the United States as a dependable supplier.
- Embargoes encourage other countries to increase production as a means of achieving self-sufficiency.
- Embargoes encourage competitive exporting countries to increase production.
- It is difficult to prevent the intended embargoed country from importing the commodity from another source.

Policy Tool: **Sanctity of Contracts**

Policy Area: **International Trade, Embargoes**

What It Is: Sanctity of contracts provides that if an embargo on exports is imposed, exporters will still be able to fulfill their contract obligations for a period of 270 days after the imposition. Sanctity of contract provisions were included as an amendment to the extension of the Commodity Futures Trading Commission Bill in 1983.

Objective: To assure importing countries that the United States is a dependable supplier and will deliver on the contract terms. A secondary objective is to reduce the impact of export embargoes on exporting firms and producers.

When Used: After lifting the Soviet grain embargo in April 1981, producer organizations and exporting firms applied increasing pressure on the Reagan administration for sanctity of contracts. In 1982 President Reagan provided assurance that he would allow increased purchases by the Soviets with sanctity of contracts. This principle was written into law in early 1983 and applies to all agricultural export sales.

Experience: The abrupt imposition of the Russian grain embargo in January 1980 left U.S. producers and exporters with delivery commitments that were disallowed. While the U.S. government provided compensation to exporters for losses incurred, long-term injury ensued to the reputation of the United States as a reliable agricultural exporter. This was one of several factors leading to a decline in the U.S. share of total world trade in the early 1980s.

Consequences:

- The United States is viewed as a more reliable supplier of agricultural exports.
- Importers know that when they sign a contract for delivery of U.S. agricultural products, there will not be governmental interference with performance on it.
- Exporters are assured their sales will be allowed.
- Producers are shielded from the immediate effects of embargoes.

Policy Tool: **Long-Term Bilateral Trade Agreements**

Policy Area: **International Trade, Trade Agreements**

What It Is: A long-term bilateral trade agreement is a contract between two countries specifying the quantity of a commodity to be traded over a certain time period. Bilateral trade agreements normally run for a period of 3 to 5 years, although they may be simple 1-year agreements that are renewed annually. The agreements normally specify the minimum quantity to be purchased and the maximum quantity to be supplied. Generally no provisions exist with regard to the price to be paid.

Objectives: To provide supply assurance for the importing country and market assurance for the exporting country. In addition, trade agreements are utilized to normalize trade, develop markets, and retain markets for farm products.

When Used: Trade agreements have become increasingly common since a world food shortage was experienced in the early 1970s. The most publicized agreement was the 5-year contract negotiated with the Soviets in 1975 which contained an agreement to purchase a minimum of 6 million metric tons of grain with the United States agreeing to supply at least 8 million metric tons. In the early 1980s the United States became cool to the trade agreement concept while Australia and Canada signed agreements with several countries including the USSR and China. In 1983, the Reagan Administration changed policy and renegotiated a new long-term trade agreement with the Soviets requiring purchases of between 9 and 12 million metric tons of grain.

Experience: Trade agreements are a means of getting a foot in the door of a market on a long-term basis. The quantities specified in the agreement have generally been less than the normal trading levels. Unwillingness to sign trade agreements in the early 1980s probably reduced the U.S. market share in export markets such as the USSR.

Consequences:

- The total volume of trade tends to be increased and stabilized between the parties to the agreement.
- Importing countries outside of the agreement may be denied a source of the commodity if supplies become short.
- Exporting countries outside of the agreement may be denied market outlets when supplies are plentiful.
- Trade agreements are, in essence, barriers to trade in that they tie up markets over long time periods.
- Trade agreements cause greater fluctuations in pricing since they effectively reduce the world supply which can be traded.

Policy Tool:	**International Commodity Agreements**
Policy Area:	**International Trade, Trade Agreements**
What It Is:	An international commodity agreement is a multilateral agreement among countries to affect the terms of trade. The terms of trade affected by an international commodity agreement may include the price level, quantity sold, quantity produced, or quantity held in reserve. Legally, commodity agreements are treaties among the participating nations.
Objective:	To raise the world price above the equilibrium levels, to stabilize price, and to provide increased supply assurance.
When Used:	Commodity agreements have been used most extensively on wheat, being first established in 1949. Currently they are used extensively among developing countries on commodities ranging from tin to sugar and coffee. Interestingly, OPEC might also be looked upon as an international commodity agreement.
Experience:	Commodity agreements have had a reasonably good history of stabilizing prices as long as burdensome surpluses or shortages do not exist. Commodity agreements designed to raise prices have a tendancy to fall apart because of a lack of control over production. To be truly effective, commodity agreements require close coordination of domestic farm programs with the activities of international commodity agreements.
Consequences:	• Commodity agreements provide increased price stability. • Domestic prices are raised. • Exchange of information among countries on market conditions is increased. • When prices are raised, excess supplies frequently accumulate. • Unless commodity agreements are well coordinated with the domestic farm programs of the participating countries, they tend to breakdown.

Policy Tool:	**Barter**
Policy Area:	**International Trade, Trade Agreements**
What It Is:	Barter is trade among two or more countries or firms involving the exchange of goods and/or services of equal value instead of currency or credit transactions as payment for a commodity.
Objective:	To facilitate trade with developing countries experiencing short-run financial difficulties which make traditional commercial trade impossible. To obtain sources of supply of other commodities that might not otherwise be available.
When Used:	The first U.S. experience in a barter agreement in 15 years took place in 1982 with an exchange of surplus powdered milk to Jamaica for bauxite.
Experience:	Barter has limited ability to expand exports. Rather, it is more of a temporary measure to maintain an existing market during periods of adverse economic conditions. Its greatest potential appears to be as a market development tool for developing countries with mineral or strategic metals of importance to the U.S. defense and industrial sectors. The biggest problem in barter is matching needs with products.
Consequences:	● Barter helps maintain export levels. ● Barter provides increased potential for developing commercial markets for agricultural products. ● Barter has limited applicability because of the required coincidence of need. ● Barter may displace commercial sales. ● Barter value generally approximates relative world market value of the commodities bartered.

MARKETING PROGRAMS

Policy Tool: **Commodity Distribution**

Policy Area: **Marketing Programs, Demand Expansion, Food Assistance**

What It Is: Commodity distribution programs provide primarily staple food products direct from the government to needy households. Commodities provided are generally in surplus, although nonsurplus food products have been provided in times of high unemployment. Commodities are distributed to those households who qualify according to specific eligibility standards--normally participation in some welfare program or unemployed.

Objective: To expand the demand for farm products, utilize surplus commodities, and improve nutrition of needy consumers.

When Used: Commodity distribution was a forerunner of the food stamp program. Such direct distribution programs date back at least to the Great Depression era. However, even after widespread adoption of the food stamp program in the 1960s, commodity distribution has from time to time resurfaced either to dispose of surplus government stocks or to deal with problems of unemployment and poverty.

Experience: Commodity distribution programs are costly because of the necessary network of qualification, processing, storage transportation, and distribution systems. With the advent of food stamps in the 1960s, the direct distribution system was dismantled. In the 1980s when surpluses and unemployment reappeared, pressure grew to once again distribute commodities--beginning with cheese. Rather than establishing a distribution system, the Reagan administration provided the commodities to volunteer welfare groups such as churches. It was found, however, that under this system many unqualified recipients received the products.

Consequences:

- Product movement is expanded to the extent that the quantities given away exceed normal recipient consumption levels. Reduced expenditures for distributed products results in purchases of other foods and/or nonfood items.
- The commodities given away displace retail sales of the commodities and their substitutes. If people are given commodities, they certainly will not buy them or the substitutes for them. Food processors and retailers thus tend to be opposed to direct distribution programs.
- For commodities in surplus that are acquired under price support programs, such as dairy products, the government will end up actually purchasing more products to the extent that those receiving the products, buy less of them through grocery stores.
- Nutrition levels of recipients are improved to the extent of the nutritional value of the additional quantities or items consumed.

Policy Tool: **School Lunch**

Policy Area: **Marketing Programs, Demand Expansion, Food Assistance**

What It Is: The school lunch program provides assistance to schools through direct commodity distribution, cash subsidies, and, at times, subsidies for the purchase of equipment. Over time this program has been expanded to encompass both breakfast and lunch. Free or subsidized meals are given to children from low-income households.

Objective: To improve the nutritional levels of school-age children and assure that they have at least one nutritionally balanced meal on school days.

When Used: The school lunch program has been in existence since the 1930s. Over time it has gradually put increasing emphasis on cash as opposed to commodity distribution. Schools have had increasing impact on the specific commodities obtained under the program. In the early 1980s, the program fed nearly 30 million students at a federal cost of $5 billion.

Experience: The school lunch program began as a depression measure to support prices and to improve nutritional levels for all school children. From its inception through much of the 1960s, emphasis was placed on distributing surplus commodities in a nutritionally balanced relationship. Schools, however, gradually wanted more to say about what was received. In addition, increasing costs of in-school preparation, relative to institutional and fast-food preparation, led to increased pressure to provide a larger proportion of cash subsidies relative to commodities. Increasing cost of meals, led to school lunch and breakfast subsidies being restricted to children from low-income households. One of the main problems with the program has been complaints about the quality of meals served. Pressure always exists to provide a larger proportion of cash assistance.

Consequences:

- The demand for food used in the school lunch program is increased.
- Nutritional levels of school-age children are increased--particularly of lower income households.
- While commodities distributed are a less important proportion of the total food used, the school lunch program continues to provide an important outlet for surplus dairy products, meat, fruits, and vegetables.
- The development of a large institutional food service sector designed to serve this very large program has been fostered.

Policy Tool: **Women, Infants, and Children (WIC) Program**

Policy Area: **Marketing Programs, Demand Expansion, Food Assistance**

What It Is: The WIC program combines direct commodity distribution with nutrition education. Most WIC recipients probably are also on food stamps or aid to families with dependent children. Nutrition education programs teach the recipients how to combine commodities with food expenditure dollars most effectively to improve nutrition and family living standards. Many of the recipients are single mothers with very low incomes and pre-school children.

Objective: To provide low-income mothers with a complete assistance program designed to improve nutrition levels for the family as a whole.

When Used: The WIC program began on an experimental basis in the early 1960s and has experienced almost continual expansion since. Participation in the program has a tendency to increase in times of recession and increased unemployment.

Experience: Although WIC has been criticized for its predominantly unwed mothers constituency, studies demonstrate it to be one of the most effective programs in improving nutrition levels. This results largely from the combination of monetary, commodity, and nutrition education assistance. Attempts to cut back on the WIC program (as a cost reducing measure) have consistently failed under the weight of studies showing the positive impact on nutrition and resulting broad based "hunger lobby" support.

Consequences:

- Nutrition education programs result in increased consumption of foods normally considered to be part of a nutritionally balanced diet--particularly poultry, milk, cereals, fruits, and vegetables.
- Commodities distributed tend to be in surplus and/or have particular nutritional value.
- Commodities distributed partially displace commercial retail sales of these products and their substitutes.
- Overall recipient nutritional level is demonstrably improved.

Policy Tool:	**Food Stamps**
Policy Area:	**Marketing Programs, Demand Expansion, Food Assistance**
What It Is:	The food stamp program provides eligible recipients with stamps having an equivalent cash value. Eligibility is determined on the basis of income levels in relation to established poverty guidelines. Level of assistance is based on a USDA "thrifty food budget" covering the cost of commodities needed to achieve a balanced diet. Higher levels of assistance are provided for lower incomes and larger family sizes.
Objective:	To provide income assistance for the purchase of food by low-income households and thereby expand the demand for food as well as improve nutritional levels of recipients.
When Used:	The food stamp program, while first used in the 1930s, began in earnest as a long-term food assistance program in the early 1960s and has since mushroomed to a social program with more than 20 million recipients and costing about $12 billion in the early 1980s. Food manufacturers and retailers actively supported the conversion from direct commodity distribution to food stamps because food stamps do not displace commercial sales (see Commodity Distribution).
Experience:	The merits of the food stamp program have been extensively debated. Major concerns regarding the program involve who should be eligible, the level of assistance, the commodities allowed to be purchased with stamps, and the potential for program abuse. Among the advocates of change are some who would prefer going back to commodity distribution and others who would prefer giving recipients cash (referred to as "cashing out"). Some advocate moving food stamps out of USDA.
Consequences:	● Consumption of food is increased. The largest increases occur in the demand for meat, milk, and poultry. ● Some farm-state congressmen argue that the food stamp program helps them to get farm legislation through the Congress because major farm bills with food program components invariably attract urban interest. ● Nutritional levels of recipients are improved, although not as much as under such programs as WIC. ● Food retailers realize direct benefits--particularly those in lower income neighborhoods.

Policy Tool:	**Cashing Out, Welfare Reform**
Policy Area:	**Marketing Programs, Demand Expansion, Food Assistance**
What It Is:	Cashing out would provide food assistance in cash rather than commodities or food stamps. All food and income assistance programs would be consolidated into a single cash payment.
Objective:	To provide income assistance to low-income households.
When Used:	While cash has not yet been substituted for food stamps, over time there has been gradual but persistent movement in the direction of providing a larger proportion of cash, as opposed to commodity or food stamp, assistance: Food stamps were substituted for direct commodity distribution, and cash subsidies to schools have become increasingly important relative to commodities.
Experience:	Cash has provided schools greater flexibility in the ultimate use of the assistance. Thus it is argued to result in a greater increase in student satisfaction. The cost of running several individual programs each having different eligibility standards has become increasingly high. There are those who believe that such consumer-oriented policy changes have come to so dominate USDA, that producer-oriented programs have taken a back seat.
Consequences:	• The total welfare bill would be reduced as program duplications are eliminated. • Food consumption would fall if the current equivalent level of cash assistance were provided. • Prices of surplus commodities would fluctuate more as government outlets for surplus commodities are reduced. • Food assistance programs would be moved out of USDA and would not be part of the farm bill deliberations, thus reducing the potential for obtaining urban support for farm programs.

Policy Tool: **Foreign Market Development**

Policy Area: **Marketing Programs, Demand Expansion**

What It Is: Foreign market development activities of the United States government involve assisting firms or producer organizations in selling products abroad. These programs, managed by the Foreign Agriculture Service (FAS) in the USDA, are planned, implemented, evaluated, and financed jointly by the FAS and the cooperator organizations. They emphasize market information and technical assistance in servicing the needs of importing countries to utilize products effectively, enhance buyer awareness, and educate consumers. Producer program costs are generally financed through a checkoff program on commodities sold (see also Checkoff Programs).

Objective: To expand export demand for farm products.

When Used: Foreign market development activities depend heavily on producer, processor, and handler initiative to develop and finance a joint FAS-industry cooperator program. While FAS through its agricultural counselors has a general responsibility to promote exports, the greatest effort is devoted to those products where cooperator programs exist.

Experience: Cooperator programs that are well conceived and financed are effective at expanding the demand as long as the commodity is available at competitive prices. It is difficult, if not impossible, to expand export markets for U.S. farm products when our prices are higher than the world price.

Consequences:

- The quantity of products exported is increased.
- Increased producer understanding of international markets is developed.
- Cost of operating the market development program is shared by a large number of producers, making it more cost effective (see also Checkoff Programs).

Policy Tool:	**Domestic Market Development**
Policy Area:	**Marketing Programs, Demand Expansion**
What It Is:	Domestic market development programs assist producers in raising funds required to carry out generic promotion and advertising programs. In addition, provision is made for refunds to producers desiring not to participate and audits of the use of funds (see also Checkoff Programs). Such programs are authorized on an individual commodity basis under either Congressional or state legislative authority.
Objective:	To expand the domestic demand for farm products.
When Used:	Domestic market development programs develop only on producer initiative. Producers have to be organized to obtain the checkoff legislation or marketing order programs needed to implement a market development program. Market development programs have been most extensive in milk, cotton, and oranges, although programs have existed also in wheat and potatoes. Several of the marketing orders contain provisions for the collection of funds needed for market development activities.
Experience:	Most producer domestic market development programs are generic -- promote the product in general as opposed to a particular brand of the product. In a limited number of instances (e.g., cotton), significant resources are devoted to joint advertising -- subsidizing the advertising of innovative new uses of the product even though it is branded. Research indicates brand promotion and joint advertising programs are more effective than generic advertising.
Consequences:	● A well-conceived and well-researched producer-oriented advertising program has the potential for raising producer returns through demand expansion. ● Promotion and advertising programs are high cost and difficult to evaluate. ● Promotion and advertising programs must be geared to the product available and the size of the market.

Policy Tool: **Checkoff Programs**

Policy Area: **Marketing Programs, Demand Expansion**

What It Is: Checkoff programs deduct a given amount per unit of product marketed by the producer to finance market development programs. Such programs exist under either special individual commodity legislation or general authorizing legislation, such as marketing orders. Such legislation may allow for refunds which reduce the programs' effectiveness and equity.

Objective: To finance foreign and domestic market development programs and research.

When Used: Checkoff programs are used when the necessary legislation exists and the required majority of the producers approve it in a referendum. In special commodity legislation at the federal level, refund provisions have generally been required.

Experience: Voluntary checkoff programs have proved difficult to maintain. Mandatory checkoff programs with refund provisions have sometimes encountered problems with relatively high redemption experience. Congress has generally been unwilling to allow a mandatory program without refund provisions.

Consequences:

- Without refund provisions, checkoff programs provide an equitable means of financing costly market development programs.
- With refund provisions, checkoff programs offer the potential for having inequities.

Policy Tool:	**Cooperatives, Capper-Volstead**
Policy Area:	**Marketing Programs, Market Organization and Control**
What It Is:	The Capper-Volstead Act gives producers the right to act together in marketing their products, therefore providing cooperatives limited exemption from the antitrust laws. It prohibits cooperatives from unduly enhancing price, however. The Secretary of Agriculture is responsible for enforcing the provisions regarding undue price enhancement.
Objective:	To assist producers in jointly marketing their products by providing a means for increasing prices, lowering costs, stabilizing market flows, expanding markets, or improving communication.
When Used:	The Capper-Volstead exemption is limited to farmers and to marketing functions. Farmers are those involved in actual growing functions; therefore, agribusiness corporate integrators are not farmers. Likewise, joint, otherwise illegal, activities between cooperatives and noncooperatives are not covered by the Capper-Volstead exemption. Marketing functions are interpreted broadly to include bargaining, information, pricing, processing, and so forth. Cooperatives appear to have virtually unlimited rights to merge with one another. They cannot, however, engage in predatory or coersive practices with regard to either members or nonmembers.
Experience:	Cooperatives have effectively organized to market their products in a number of ways. The cooperative market share is about 33 percent overall, but as high as 65 percent of the market in milk, fruits for processing, and vegetables for processing. Cooperatives are most effective when they are integrated and there is a firm producer commitment to market through them. Marketing orders are frequently used to augment cooperative market power and influence. Proposals have been made to eliminate the Capper-Volstead exemption or to transfer it to the Federal Trade Commission for enforcement.
Consequences:	• Suspending provisions of the Capper-Volstead Act would render pricing activities among farmers a violation of the Sherman Act and the Federal Trade Commission Act. • Cooperatives have the potential for raising producer returns if well organized, well managed, and producers have a commitment to market through the cooperative. • Cooperatives' influence is frequently eroded by so-called "free riders" who obtain the benefits of the cooperative but pay none of the costs. • Substantial producer investment is generally required for successful cooperative activity. • Cooperatives have been important to the functioning of marketing orders because cooperative members have been allowed to vote as a bloc.

Policy Tool: **Marketing Orders**

Policy Area: **Marketing Programs, Market Organization and Control**
Domestic Farm Policy, Price Stabilization

What It Is: Marketing orders are joint industry - government programs regulating the quantity and/or quality of specified products entering the market channel. Marketing orders are authorized for specific commodities under the Agricultural Marketing Agreements Act of 1937.

Objective: To create more orderly marketing conditions for farm products and thereby stabilize supplies, prices, and producer income.

When Used: Marketing orders are available only for commodities designated in the Agricultural Marketing Agreements Act. These include specific fruits, vegetables, nuts, and milk. Orders for fruits, vegetables, and nuts emphasize the establishment of minimum quality, grade, size, or maturity standards for products entering the market. Reserve pools exist for some commodities in which stocks are held over the marketing season or into the next marketing season. Milk prices are set by the marketing order in terms of the milk's end use. Higher prices are charged for milk used for fluid purposes. Orders are put into effect after a commodity hearing, the concurrence of the Secretary of Agriculture, and the approval of two-thirds of the affected producers in a referendum.

Experience: Marketing orders have been highly effective in stabilizing markets where they have been used. Over time, however, the Secretary of Agriculture has been less inclined to utilize orders as strict supply management tools. Emphasis has thus been placed on orderly marketing and price stabilization. Strict marketing quotas have been limited to minor commodities such as hops and peppermint. All marketing orders with market flow provisions are under attack by the Office of Management and Budget as well as consumer advocate groups.

Consequences:

- Increased price stability is provided throughout the marketing season by strict marketing controls.
- Commodities available for sale are of more uniform quality.
- Commodities are more readily available throughout the year.
- Producer prices are increased.

Policy Tool: **Marketing Boards**

Policy Area: **Marketing Programs, Market Organization and Control**
International Trade, Trade Agreements
Domestic Farm Programs, Price Stabilization

What It Is: A marketing board is a central government authority which directs the marketing of a commodity. Export management is the most frequently performed function of a marketing board. With all exports centralized in a single government agency, producers give up the right to their commodities at harvest; all storage and marketing functions are managed by the government. Producers receive an advance on commodities delivered or stored on farm, with subsequent payments being made as marketing is completed. All producers receive the same price (pool price) adjusted for location and quality. Additional farm program provisions, such as minimum return to producers, may also be provided through the marketing board.

Objective: To raise and stabilize producer prices as well as offset the superior market power of commodity buyers.

When Used: Marketing boards have never been used in the United States. They are used extensively in Canada, Australia, and South Africa.

Experience: Evidence of the impact of marketing boards on producer prices and incomes is mixed, with some showing higher returns and others not. Boards do, however, provide increased price and income stability to the producer, since the producer is shielded from the effects of within-year price fluctuation. While boards are frequently credited with providing strict control over production, their record is considerally less impressive.

Consequences:

- Within-year producer price and income risk would be reduced.
- The marketing and pricing function would be removed from the producer.
- Much of the profit opportunities from handling and storing grain would be eliminated.
- The influence of major exporting and marketing firms on commodity prices would be reduced.
- The role of government in marketing would be substantially increased.
- The United States would be better able to compete against state traders for export sales.

Policy Tools: **Market News Price Reporting**

Policy Area: **Marketing Programs, Market Facilitators**

What It Is: Market news provides daily information on prices in spot or cash markets for farm products.

Objective: To improve the quality and quantity of information on market activity available to farmers and agribusiness firms and thereby make market conditions more competitive.

When Used: Authority for market news extends back to World War I.

Experience: Market news has been in a continuous state of modernization and improvement since it was established. Market news increasingly finds itself competing with private information sources such as Urner-Barry and the Yellow Sheet. These private reports are used extensively in formula pricing. Private reports have been the subject of much debate over accuracy and reliability, while USDA reports have been subject to questions of timeliness, accuracy, and statistical reliability. Proposals have been made to transfer all market news functions to the private sector. Considerable controversy surrounds USDA's unwillingness to report contract terms for products such as broilers.

Consequences:

- Market news provides increased equality of price information among producers and agribusiness firms.
- Market news is of greatest benefit to smaller and middle size farm firms because they cannot afford private sources of information.
- Market news acts as a public check on private sources of market information.
- Market news is even more useful with increasing numbers of vertical integration and forward contracts which reduce price information in the market.
- Government cost cutting measures raise the question of what market news users should pay for price information.

Policy Tools: **Crop and Livestock Production Reports**

Policy Area: **Marketing Programs, Market Facilitators**

What It Is: Crop and livestock production reports provide detailed estimates (predictions) of crop production from before planting (intentions) through harvest.

Objective: To improve the quality and quantity of available information on production prospects and thereby make markets more competitive.

When Used: Crop and livestock production reports have their origin in a series of laws enacted between World War I and the late 1940s. They are used by the private sector as an aid to production and marketing decisions, by economists to forecast, and by government officials to develop policy and aid in program decisions.

Experience. The USDA's goal is estimates within 1 or 2 percent of actual production. Its record in achieving this degree of accuracy has been outstanding. USDA crop reports are frequently charged with having the effect of lowering farm prices. A bias one way or the other is impossible to confirm. Extensive steps are taken to protect the integrity of the reports. Government cost cutting measures have reduced the quantity (and maybe the quality) of available information. Efforts to charge for access to crop and production reports have come under considerable fire.

Consequences:

- Crop and livestock reports make markets more competitive.
- Without crop and livestock reports, this information would be available only to those firms that can afford this service from private information sources. This would be mainly agribusiness firms and large-scale farmers.
- Crop and livestock reports increase the accuracy of both public and private sector economic outlook and situation analysis.
- Crop and livestock reports are needed for informed policy decisions. They provide the data base on which economic analyses are conducted.

Policy Tool:	**Export Sales Reporting**
Policy Area:	**Marketing Programs, Market Facilitators**
What It Is:	The USDA presently requires that export sales involving more than 100,000 MT of major grains and oilseeds be reported to the USDA within 24 hours of sale. For other commodities, weekly reports are required.
Objective:	The policy is designed to provide information for the government to use in developing export policies and programs, to provide producers with information to help in their marketing decisions, and to improve performance of U.S. commodity markets by making timely information on export sales transactions available to the public.
When Used:	Following the impacts of the unanticipated large grain sales to the USSR in 1972, the government instituted the export sales reporting system in September 1973 under Section 812 of the Agriculture and Consumer Protection Act of 1973. It has been in operation since that time. Modifications to the system were made in 1980 to shorten the public reporting lags of 11 to 18 days to approximately 7 to 14 days.
Experience:	The export sales reporting system has had moderate success in achieving its goal of increased access to timely information. The system still suffers from substantial lag time in reporting information and limited detail on contract specifics. A number of alternatives, including specific contract terms and prenotification, have been considered.
Consequences:	● Overall quality and quantity of information concerning export transactions is increased. ● USDA is provided with prior warning of sales that could jeopardize supplies available in the United States. ● More information on supplies reduces the probability of an embargo resulting from commodity shortages. ● Prices are more responsive to export market conditions.

Policy Tools: **Grades and Standards**

Policy Area: **Marketing Programs, Market Facilitators**

What It Is: Grades and standards classify units of a commodity according to quality so the variation or range in quality is smaller within groups than it is over the whole range of the commodity.

Objective: To develop homogenous groups by quality to facilitate orderly marketing of a commodity.

When Used: Grain grades are established under the U.S. Grain Standards Act while other grades are established under several different pieces of legislation, including the Agricultural Marketing Act of 1946. Grades and standards exist for virtually all agricultural commodities. Most grades are primarily designed to facilitate trading at the wholesale market level although grades such as those on beef have a definite consumer orientation.

Experience: Once grades are established, they are very difficult to change. In addition, there is resistance to the establishment of consumer oriented grades because opportunities for product differentiation (advertising) are reduced. Questions exist regarding the extent to which grades should reflect the end use of the product. Frequently, private grades and USDA grades reflect a different set of factors. Over time, grades and standards tend to become unresponsive to consumer preferences, probably because of resistance to changing the grades.

Consequences:

- Grades increase the quantity of information available to buyers and sellers.
- Grades increase the accuracy of pricing within different quality classes of the commodity.
- Grades reduce the opportunity for abuse and misunderstanding between buyers and sellers of commodities that are sold without buyer inspection.
- Grades force the quality marketed to the lowest acceptable level of each grade.
- Grades reduce the opportunity for product differentiation.

GENERAL ECONOMIC POLICY TOOLS

Policy Tool: **Monetary Policy**

Policy Area: **General Economic Policy**

What It Is: Monetary policy involves managing the supply and demand for money as a means of regulating the general economy. The primary impact of monetary policy is on the quantity of money available for lending and thus on the rate of interest. Managing the money supply is the primary function of the Federal Reserve System.

Objective: To maintain stable economic growth and control inflation through the management of the money supply.

When Used: Primary reliance on monetary policy to manage the economy has largely been associated with Republican administrations. The Reagan administration has placed unusually heavy reliance on monetary policy to control inflation.

Experience: Considerable debate exists among economists and policy makers regarding the extent to which monetary policy can be effectively utilized to obtain stable economic growth without inflation. Reagan economic policies resticting monetary growth have resulted in high interest rates and fostered a strong dollar. This combination has had adverse effects on exports, housing, automobile industries, and real growth. Additionally, this policy has compounded the cost-price squeeze and cash flow problems suffered by commercial farmers who are under capitalized and/or beginning farmers.

Consequences:

- Monetary restraint, meaning relatively slow and stable money supply growth, results in relatively high interest rates and a strong dollar.
- High interest rates reduce incentives to invest in plant and equipment while encouraging savings and investment in dollars to gain both interest income and any appreciation in value relative to other currencies.
- When the dollar increases in value, U.S. farm products become more expensive in terms of foriegn currencies. As a result, exports decline.
- A decline in exports hurts the U.S. balance of trade, meaning imports increase relative to exports. When imports are greater than exports, it is referred to as an unfavorable balance of trade.

Policy Tool: **Fiscal Policy**

Policy Area: **General Economic Policy**

What It Is: Fiscal policy involves the federal government using its power to tax and spend as a means of stimulating or curbing the overall level of economic activity. The primary impact of fiscal policy is on the aggregate demand for goods and services. The President and the Congress have direct control over fiscal policy.

Objective: To maintain economic growth and control inflation through tax and spending policy.

When Used: Primary reliance on fiscal policy to manage the economy has largely been associated with Democratic administrations. The Kennedy and Johnson administrations became particularly strong advocates of using the power to tax and spend to "fine tune" the economy.

Experience: The impact of fiscal policy on economic growth appears to be more direct and has less adverse impact on particular sectors such as agriculture. However, since tax increases are always politically unpopular, deficits in government spending have had a strong tendency to widen. Questions then arise as to how the deficit should be financed.

Consequences:

- Tax cuts (investment tax credits, accelerated cost recovery, first year expensing and lower tax rates) increase disposable income and thus stimulate the economy.
- Government spending increases the demand for goods and services and thus stimulates the economy.
- Slowing down economic growth requires an increase in taxes or a reduction in government spending.
- Fiscal restraint is more difficult to implement politically than monetary restraint.

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A Financial Perspective on Agriculture

Emanuel Melichar, of the Board's Division of Research and Statistics, prepared this article.

For more than a decade, the financial experience of the agricultural sector has been dominated first by the advent, and then by the aftereffects, of a farm boom of major proportions. Such episodes have been relatively rare—two earlier in this century, during and immediately after the World Wars, and two in the nineteenth century, also triggered by the commodity demands of U.S. and European wars. But the effects of each boom extended over several decades, shaping the fortunes of an entire generation of farmers and their landlords, lenders, and suppliers. In each case, the vast majority of farmers were lifted by an initial wave of unanticipated prosperity. After the booms, however, their experience varied according to how dependent they had become on continued high commodity prices, and thus how financially vulnerable they were as prices and incomes retreated. After each boom some farmers experienced lasting financial improvement, while others endured prolonged financial stress or went bankrupt.

The current episode has retraced much of this familiar pattern. When, in 1972 and 1973, huge increases in the prices of major farm commodities ushered in the boom, virtually all producers benefited. Many continued to enjoy higher income for much of the decade; for some groups, however, the prosperity was more fleeting. Livestock prices and profits broke first, in 1974, while crop prices remained at high levels for two more years. By then some farmers, particularly in marginal farming areas, had made investments whose success depended on continued high prices; these farmers were plunged into financial difficulty soon after grain prices declined in 1976. While such farmers pressed for government assistance, the majority continued to enjoy real incomes above the pre-boom levels and to bid up real prices of farmland. Then, in 1978 and 1979, livestock and crop prices again surged upward, giving another boost to income and expectations.

The boom ended in 1980, when farm commodity prices failed to advance while prices in general were rising rapidly. During the next two years, heavy harvests and worldwide economic recession lowered prospects for a rebound in farm prices and income, and farmland prices in the major grain and livestock areas fell sharply. At the same time, farmers with short-term debt or variable-rate loans were hit by a large increase in interest rates. These developments swelled the number of farmers in serious financial difficulty.

Although public attention naturally has focused on farmers in financial distress, such cases have not represented the norm of farm conditions. On balance, real profits from farm assets and real farm wealth have remained well above pre-boom levels. The first part of this article discusses this experience and its implications for farm policy.

These observations on overall farm financial conditions, however, mask highly diverse experiences among various groups of farmers. Ever since interest rates rose far above the average rate of return to assets, a sizable group of heavily indebted operators has faced financial stress. In examining their problem and numbers, the second part of the article finds that, although they are a minority, these farmers owe much of the outstanding farm debt.

As heavily indebted farmers began to have problems meeting loan payments, loan losses at rural banks increased. On balance, however, such losses were absorbed without strain because these banks had built up their profit and capital positions during the farm boom. The article concludes with a look at the experience and condition of rural banks.

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PROFITABILITY OF AGRICULTURE

The last post-boom decline in farm earnings bottomed out in the mid-1950s. For the rest of that decade and throughout the 1960s, real income from farm assets grew fairly steadily. Income growth in turn produced rising real land prices and favorable experience with debt financing. These developments shaped attitudes that affected the way farmers responded to the income boom of the 1970s.

Income from Assets

Income from assets, an estimate of the profits attributable to the ownership and control of farm assets, is derived as indicated in table 1. It is income after operating expenses, depreciation, and imputed charges for the value of the labor and management performed by farm operators, but before interest payments by those operators and landlords who are in debt. Such income underlies the value of farm assets, especially the value of farmland.

The trends in farm income of the past 30 years are shown in chart 1, adjusted for general price inflation and presented in 1983 dollars so that historical data can be more readily related to current values. Three aspects of the record of income from assets stand out: the significant uptrend before 1972, the huge rise in the 1970s, and the wide margin of the current level over pre-boom levels.

1. Farm income, returns, assets, and debts of operators and landlords, selected years, 1953–83[1]

Billions of 1983 dollars

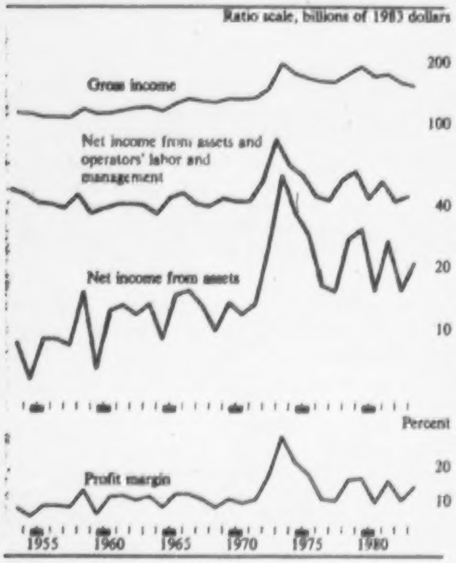
Item	1953	1958	1963	1968	1973	1978	1983
Derivation of net income and total returns							
Gross income (including net CCC loans)	111	115	118	124	192	171	149
LESS: Wages and perquisites paid to hired labor	9	9	10	10	10	12	12
LESS: Other operating expenses, excluding interest	43	50	56	61	81	84	74
LESS: Depreciation allowances and accidental damage	10	11	12	13	15	21	19
EQUALS: Income from assets and operators' labor and management	48	46	41	40	85	54	45
LESS: Income imputed to operators' labor[2]	36	27	23	26	23	21	19
LESS: Income imputed to operators' management work	4	4	4	5	7	7	6
EQUALS: Income from assets	8	15	13	10	55	27	21
PLUS: Real capital gain on assets[3]	−23	33	9	0	88	90	4
EQUALS: Total return from assets	−14	47	22	10	143	117	24
LESS: Interest paid	2	3	5	7	9	14	21
PLUS: Real capital gain on debt[3]	1	1	1	5	10	13	8
EQUALS: Total return from equity	−16	45	19	8	143	116	12
Balance sheet, January 1							
Assets	455	480	547	635	715	979	966
LESS: Debt (including CCC loans)	49	57	82	112	126	171	207
EQUALS: Equity	406	423	464	522	589	808	759

1. Data are for the farm sector excluding farm households (operators' dwellings, household equipment and furnishings, and all financial assets except currency, bank demand deposits, and stock in farmers' cooperatives). Except as noted below, data shown are series published by the U.S. Department of Agriculture (USDA), adjusted for general price inflation by the implicit price deflator for personal consumption expenditures (estimated 1983 average = 1.00). Data for 1983 are estimates based on forecast ranges published by USDA in late 1983.

2. Because published USDA data for income imputed to operators' labor appear to have substantially understated the value of farm labor performed by operators and unpaid family workers, data shown are an interim series estimated by the author. The annual percentages of total farm work performed by operators and unpaid family workers and by hired labor respectively were estimated from available data from USDA and the Bureau of Labor Statistics on employment and man-hours. The ratio of the operator percentage to the hired labor percentage was then multiplied by the USDA estimate of wages and perquisites paid to hired labor. For recent years, estimates for imputed labor obtained in this way are considerably above those of the USDA. Consequently, income from assets and total returns from assets and equity derived using the interim labor series are correspondingly lower than present USDA estimates of these series.

3. Real capital gain (loss) on farm assets is the amount by which the annual increase in total market value of assets is greater (less) than the sum of net investment and of the change in general purchasing power of the total funds tied up in these assets. Real capital gain (loss) on debt is the decrease (increase) in general purchasing power of the funds owed. Changes in general purchasing power are measured by the implicit price deflator for personal consumption expenditures. The estimates shown thus differ from those of the USDA, which uses the consumer price index in this computation and has published these data only in current dollars.

1. Farm income



Profit margin is net income from assets as a percentage of gross income. Income series are defined in table 1.

Except for the rise of the 1970s, these aspects of farm profits are not widely recognized because attention has focused on a measure of income that includes the labor and management earnings of operators and is net of interest payments. That mixture, in effect, of wages, salaries, and income to equity has often given misleading signals about the profitability of farming. In the 1960s, such income was stagnant, as reduced labor requirements offset an upward trend in income from assets. In the 1980s, such income has declined below pre-boom levels as interest charges have risen sharply; meanwhile, income from assets has remained above pre-boom levels.

Clearly, if real income from assets has been positive and above pre-boom levels, then most of the farmers who are in financial distress are those with debt-service requirements that exceed such income. A detailed look at the problem and numbers of indebted operators follows a discussion of aggregate farm profitability and income–asset relationships.

Pricing of Farm Assets

As is true for any income-producing asset, bidding by participants in the market for land sets its price and hence implicitly its rate of return. In the market for farmland, the buyers and sellers are mainly farmers and local landlords—the latter mostly retired farmers, farm widows, and nonfarmer heirs. Active farmers dominate the buyer group. Thus the rate of return to farm assets is set by farmers themselves in the farmland market.

Farmers consider many factors when participating in the determination of land values, among them the income and risks of farm and alternative investments. Through their collective appraisal of these factors, they establish land prices consistent with their required rate of return on farm assets.

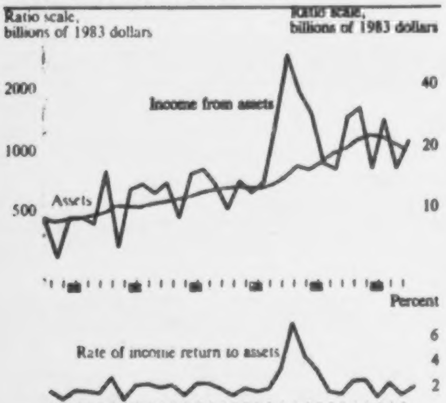
Asset values are thus established at some multiple of current income from assets. What that multiple will be depends both on the required rate of return and on the expected growth, if any, in income.

If income is not expected to change, asset values are established at the level at which the current income fully satisfies the required rate of return. If, for example, the required rate of return is 5 percent, then assets will be priced at a multiple of 20 times their current income, and the rate of return in the form of income thus also will be 5 percent.

Income may change, however, regardless of expectations. If participants in asset markets collectively believe that the change will last, then asset values respond by changing in proportion to the change in income. For instance, if income from assets rises 10 percent, then asset values also rise 10 percent. In the example used above, this rise in asset values restores the multiple of 20 times current income, to continue to provide the required return of 5 percent.

When increases in income recur regularly, or participants in asset markets have other reasons to expect growth in income, asset pricing takes account of the capital gains that, as seen above, result from such income growth. The expected annual capital gains substitute for income in satisfying the required rate of return. For example, if the required rate of return is still 5 percent

2. Farm assets and income from assets



Income and assets are defined in table 1.

but now income from assets is expected to grow by 3 percent annually, then assets will be priced at a multiple of 50 times current income, and the rate of income return will be only 2 percent.

Again, asset values respond proportionately to any income changes that appear permanent, whether they are expected or not. Thus if income increases by 10 percent, then asset values again also rise by 10 percent, to restore the multiple of 50 times earnings. Or if, contrary to expectations of growth, income from assets declines, then asset values also fall in proportion.

Such deviations from expectations, or other developments, may cause market participants to reassess prospects for income. As they alter their collective expectations, asset values may change significantly. If, for example, expected growth in income falls from 3 percent to zero while the required rate of return stays at 5 percent, then asset values will fall from a multiple of 50 times current income to one of only 20 times current income. In addition, asset values change when the required rate of return changes.

To summarize, asset values respond proportionately to changes in current income from assets, other factors remaining unchanged. Expectations of income growth do not in themselves change asset values, but enter importantly into determination of the price–earnings multiple and hence of the rate of income return. Changes in expectations of income growth or in the required rate of return do cause large changes in asset values.

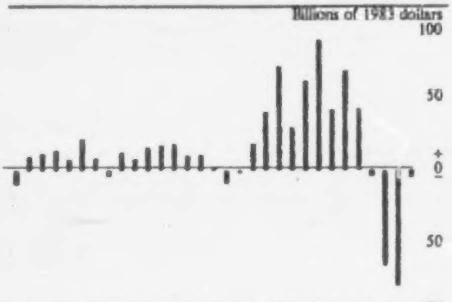
Over the past three decades, farm asset values have reflected income developments in accordance with these principles. Asset values, dominated by changes in land prices, have tended to follow trends in income from assets (chart 2). With income generally trending upward, expectations of continued income growth apparently prevailed. Except for the early years of the boom, when income outran land prices, assets were priced at an average multiple of about 50 times income from assets, and the rate of income return thus averaged 2 percent.

Real Capital Gains—the 1960s

From the mid-1950s through the 1960s, real income from assets rose by about 3 percent annually. Consequently, significant real capital gains accrued to owners of farm real estate during most years of that period (chart 3). These increases in the real value of farm real estate (excluding operators' dwellings), measured as gains in excess of those resulting simply from net investment and general price inflation, totaled $145 billion (in 1983 dollars) over this period, an average of nearly $10 billion per year.

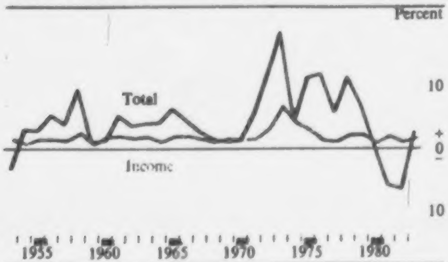
During the same period, the rate of income return to farm assets averaged 2 percent. Taken

3. Real capital gains on farm real estate



Real capital gain is defined in table 1.

4. Rates of return to farm assets



Returns and assets are defined in table 1. Total return is the sum of income from assets and real capital gains on assets.

together, income and real capital gains on all assets provided a total rate of return averaging 4 percent (chart 4).

Government programs contributed importantly to the growth of real income from assets in these years. Technological advances were reducing labor and other operating costs per unit of output as well as raising total output per unit of assets. Farm output prices would thus have tended to fall, but government price support programs prevented such declines. Therefore, real income from assets tended to rise, and with it total real farm wealth.

Toward the end of the decade, these effects began posing a dilemma for farm policy. As real income from assets rose, ever-larger increments were required to maintain the growth rate prevailing at that time. But, from the viewpoint of consumers and taxpayers who provided those increments, the rising real wealth of the recipients reduced the need for governmental assistance. Yet, without that income growth, a significant share of that wealth might well disappear. As the 1970s opened, rising concern about the cost of farm programs foreshadowed struggles over farm policy—when suddenly a boom in farm exports changed the whole picture.

Real Capital Gains—the 1970s

The export boom that developed in the early 1970s yielded an enormous increase in farm earnings. The unexpected decision by the Soviet Union to purchase large quantities of U.S. grain after one of its periodic droughts depleted domestic stocks and moved prices upward. Meanwhile, domestic demand for grain remained high as livestock production approached a cyclical peak. Later, the U.S. drought of 1974 and rising real incomes in food-deficit nations also worked to raise crop prices and generate export demand.

For farmers contemplating land purchases and other capital expansion, the income gains posed a familiar question: Was this a temporary boom, in which case debt-financed capital purchases would be regretted, or was it a lasting phenomenon, promising fortunes for those who seized the opportunity? The answer seemed obvious in the light of two decades of rising real farm income and wealth, successful employment of financial leverage through debt financing, and greater public concern about future scarcity of natural resources. It appeared that agriculture throughout the world had entered a new era, in which it would become progressively harder for the supply of food to meet expanding demand, so that American farmers would enjoy steadily rising exports and income.

Farm asset values responded to the new income levels and the strong expectations of continued income gains. From 1972 through 1979, real capital gains on farm real estate (excluding operators' dwellings) totaled $447 billion (in 1983 dollars), an annual average of $56 billion. Chart 3 shows how these gains dwarfed those of the preceding decades; and chart 4 shows that in most of these years, they also exceeded even the new higher income from assets, yielding some total rates of return in double digits. But the increases in asset values also were large enough to restore the earlier rate of income return, 2 percent. Thus, by the late 1970s, farmers had capitalized the new level of income from assets at a multiple that appeared to reflect expectations that income would tend to rise further.

Real Capital Losses—the 1980s

Instead of rising, income fell at the start of the new decade, and, just as important, prospects for near-term income growth dimmed. Even the longer-term prospects based on progressive resource scarcity were increasingly challenged and downgraded. Government assistance now could replace only a portion of the income that was not forthcoming from commodity markets. Inevitably, real asset values began to decline.

Real capital losses on farm real estate have totaled about $149 billion (in 1983 dollars) in the first four years of the eighties, mostly in 1981 and 1982 (chart 3). The decline in real farmland prices was halted when near-term income prospects improved with announcement of the payment-in-kind program.

Even though asset values have declined, much of the legacy of the boom remains. About $300 billion of the newly created wealth still exists, along with many billions of new debt incurred as assets were transferred at higher prices. As recent experience has vividly demonstrated, the amount of that wealth that remains in existence will depend on the extent to which the required rate of return is forthcoming. The debt, however, will require payment of scheduled interest and amortization, almost regardless of trends in asset values or income. The assets still appear to be priced at a multiple that demands significant growth in income.

The situation resembles that at the end of the 1960s, although it differs in some ways. Even after adjustment for inflation, the dollar amounts involved are much larger, and thus government assistance would have to be proportionately larger to have the same impact. Government aid at the greatly increased 1983 level proved able to stem the slide in asset values, but continued assistance on that scale appears unlikely. The greater farm wealth adds to doubts about the propriety and equity of increasing aid. Moreover, there is now considerable pressure to restrain total growth in government spending. Thus more of the post-boom adjustment remains to be worked out in the commodity and land markets.

INDEBTED FARMERS

During the 1920s and the early years of the Great Depression, farmers relearned the lesson that their forebears had absorbed in earlier "panics:" to be deeply indebted after the collapse of a boom has dire, often fatal, consequences. Outstanding farm debt peaked in 1921. During the hard times that followed, debt steadily fell—mainly through foreclosures and bankruptcies—but not nearly so fast as asset values. The ratio of debt to assets peaked at 30 percent in 1933. By then, attitudes toward debt were such that, as farm prices and incomes improved, farmers repaid rather than increased debt. Debt reduction continued through the boom in farm income of World War II. The amount of farm debt outstanding bottomed in 1946, and the ratio of debt to assets hit a low of 8 percent in 1948.

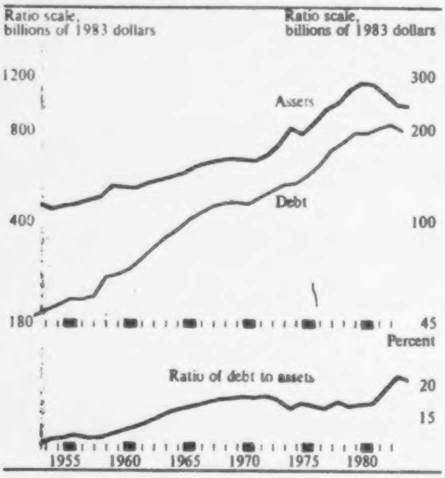
As the wartime boom in farm income was extended, first by the Marshall Plan and then by the Korean War, farmers gradually began to expand their debt. Nonetheless, in the 1950s, the level of farm debt was still low enough to help minimize the financial distress from hardships and transitions that included severe drought, declines in crop and livestock prices, and reductions in total crop acreage from its wartime level.

Debt Expansion

Attitudes toward debt formed in the 1920s proved too conservative for the new era of income growth and capital gains that unfolded after the mid-1950s. Farmers willing to borrow more freely made faster financial progress, and this new lesson was soon learned by both farmers and farm lenders. The leading college textbook on farm finance, which through four editions had cautioned on its first page that credit could be as dangerous as a buzz saw and that "many a farmer would be better off today if he had never had a chance to borrow money at all," first abbreviated and then dropped such warnings. Growth in debt was relatively rapid (chart 5). By the beginning of 1972, the ratio of debt to assets had climbed back to 18 percent.

With the onset of the boom, rapid expansion of debt continued, but it was now accompanied by more rapid increases in asset values. Thus, although the ratio of debt to assets did not increase, a large increment of debt was taken on. By 1980, real asset values had risen by 73 percent, or $480 billion (in 1983 dollars), while real debt had risen by 61 percent, or $74 billion. If these additional asset values had continued to

5. Farm assets and debt



Assets and debt are defined in table 1.

yield returns sufficient to service the additional debt, all would have been well because the two had risen in proportion. But any reduction in the income flow would mean a problem for debtors, who still had to meet scheduled interest and repayments on the additional debt. Such a reduction occurred in 1980.

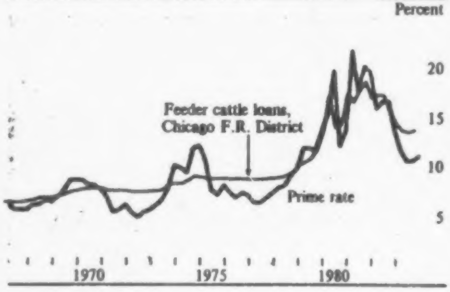
Higher Interest Rates

Another misfortune hit many farm borrowers in 1980. Interest rates rose to levels that they could not have anticipated. Furthermore, rates remained very high until late 1982 and are still, for most farm borrowers, significantly above pre-1980 levels.

The borrowers most surprised by these interest rate developments were those using short-term loans from rural banks, because, before 1979, these borrowers had been virtually insulated from cyclical changes in loan rates. Chart 6 illustrates the marked change in their experience. Before 1979, fixed ceilings on interest rates applied to all deposit instruments that rural banks could readily market to their predominantly local depositors. Thus the cost of loanable funds at these banks changed little even as the level of interest rates rose and fell sharply in national money markets during periods such as 1969–70 and 1973–74. Rates charged on farm loans by these banks were also relatively unchanged during these periods, as chart 6 demonstrates, and so clearly these rates reflected the banks' internal cost of funds plus a mark-up, rather than the potential earnings of these funds if invested in national money markets.

Rural banks probably continued to set their farm loan rates in this manner, but their internal cost of funds began to reflect cyclical movements in money market rates. This change occurred after 1978, when banks—with the authorization of six-month money market certificates—were allowed to accept smaller and shorter-term deposits bearing market-related rates, and competitive factors induced them to do so. As market rates of interest rose during 1979–81, rural depositors shifted a large proportion of their deposits into the new certificates. By mid-1981, these certificates constituted about 30 percent of the total resources of the typical rural bank. In addition, large certificates of deposit, also bearing money market rates, accounted for 7 percent of total resources. Banks also were paying market-related rates on small-saver certificates with a permitted maturity of 30 to 48 months. Thus, as a large proportion of the liabilities of rural banks quickly came to bear market-related yields, farm and other loan rates at these banks necessarily began to track market rates. While those farmers who typically borrowed from large banks and

6. Average interest rates on farm loans at rural banks compared with prime rate



Quarterly data, first day of quarter.

2. Farm cash flow, selected years, 1953–83[1]

Billions of 1983 dollars

Item	1953	1958	1963	1968	1973	1978	1983
Derivation of cash flow							
Gross income (including net CCC loans)	111	115	118	124	192	171	149
LESS: Wages and perquisites paid to hired labor	9	9	10	10	10	12	12
LESS: Other operating expenses, excluding interest	43	50	56	61	81	84	74
EQUALS: Cash flow before interest payments	59	56	52	54	100	75	64
LESS: Interest paid	2	3	5	7	9	14	21
EQUALS: Cash flow after interest payments	56	53	48	47	91	61	44
PLUS: Net borrowing (excluding CCC loans)	−1	6	8	4	18	23	4
EQUALS: Funds available for investment, consumption, and saving	55	59	56	51	109	83	47

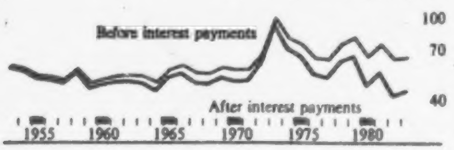
1. See table 1, note 1.

from production credit associations (PCAs) were accustomed to such cyclical movements in their loan rates, those movements were a new experience for borrowers from smaller rural banks.

Higher interest rates affected individual farmers in different ways. Those with little or no debt were largely unaffected, as were those whose debt consisted mainly of term loans at fixed rates. The large number with mortgage loans from federal land banks experienced a gradual and relatively moderate increase in their variable rates. Those borrowing from PCAs, also with variable-rate loans, faced quicker and larger increases. Rates for borrowers from rural banks rose and fell with about the same lag as those at PCAs, but reached a higher average level—about 19 percent—at the 1981 peak. Most severely affected were borrowers from large banks, at which the average rate on farm loans reached 21 percent in mid-1981.

The differential impact of higher interest rates is apparent in comparisons of real cash flow before and after payment of interest (table 2 and chart 7). Real cash flow *before* interest payments depicts the experience of farmers with little or no debt. Although it has declined significantly from its boom peaks, it remains well above its preboom level. But real cash flow *after* interest payments has fallen to levels well below those before the boom. This series illustrates the cash-flow experience of farmers whose relative amount and cost of debt were close to the sector averages—in 1983, a debt–asset ratio of 21 percent and an interest rate of 10.3 percent. Farmers more heavily indebted or paying a higher average interest rate have fared correspondingly worse, unless they are among those earning an exceptionally high rate of return on their assets.

7. Farm cash flow



Cash flow is defined in table 2.

Current Impact of Debt on Profits

Table 3 illustrates the joint impact of the level of debt and the rate of interest on a farmer's income return to equity. The calculations assume a farm with the recent average rate of income return to assets for the farm sector, 2 percent. As shown, this was also the rate of return to equity if the farmer had no debt. If, however, he had debt equal to 20 percent of assets and paid an average interest rate of 11 percent—both near the sector averages—then his return to equity was near zero. Higher ratios of debt to assets meant losses: moderate if debt consisted mainly of old fixed-rate mortgage loans at an interest rate like 7 percent, more severe if it consisted of short-term loans at a rate like 15 percent.

The table indicates that highly leveraged operators may have had operating losses equal to a fourth or a third of their equity in each of the past four years while similarly situated farmers with no debt were operating profitably. Unless such heavily indebted farmers had substantial financial reserves or other resources, they have had to

3. Rate of income return to equity, by relative level and cost of debt[1]

Percent

Ratio of debt to assets (percent)	Interest rate on outstanding debt (percent)		
	7	11	15
0	2.0	2.0	2.0
10	1.4	1.0	.6
20	.8	−.2	−1.2
30	−.1	−1.9	−3.6
40	−1.3	−4.0	−6.7
50	−3.0	−7.0	−11.0
60	−5.5	−11.5	−17.5
70	−9.7	−19.0	−28.3
80	−18.0	−34.0	−50.0
90	−43.0	−79.0	−115.0

1. This table assumes a farm on which the rate of income return to assets is 2 percent, approximately the average for the farm sector in 1980–83. To illustrate the calculations reported here: if the farm also had the average ratio of debt to assets for the farm sector, 20 percent, and the average interest rate, 11 percent, its rate of income return to equity was −0.2 percent.

liquidate assets in order to reduce their debt burden. In each recent year, according to surveys of lenders, perhaps 3 to 5 percent of farmers have been forced to liquidate productive assets. Smaller percentages were reported to have left farming through forced liquidations or foreclosures.

Extent of Financial Problems

Because the incidence of severe financial problems among farmers depends largely on relative indebtedness, the distribution of operators and their debt by the ratio of debt to assets helps to indicate how many operators are in financial difficulty and how much of total farm debt such farmers owe. These data were provided by the 1979 Farm Finance Survey, conducted by the Bureau of the Census early in 1980. Table 4 shows estimates based on the survey data, but adjusted and updated to indicate current distributions.

If, from the discussion above, it can be concluded that operators with a debt–asset ratio greater than 40 percent are experiencing financial stress, then about one-fifth of all farmers are in this predicament (table 4). This overall proportion is misleading, however, in that few of the 1.2 million operators of "very small" farms (who account for 50 percent of all operators) have much debt. Less than one-third of these operators reported that their primary occupation was farming, and of those, nearly half were over 65 years old. In the group of large and medium-sized farms that includes most full-time family operations, one-third have debt–asset ratios that suggest financial stress. At the same time, nearly one-third of the farmers in this group have little or no debt.

For farm lenders, however, the amount of debt owed by farmers experiencing financial stress is the important statistic. From this point of view, the picture is more disturbing. Nearly two-thirds of the total debt is owed by operators with debt–asset ratios greater than 40 percent (table 4). Thus lenders see much of their money in the hands of operators who are in financial trouble.

4. Estimated percentage distribution of farm operators and their debt and assets, by relative debt level and size, January 1, 1984[1]

Size of farm[2]	Ratio of farm operator debt to assets (percent)				
	0–10	11–40	41–70	71 and over	Total
	Operators				
All farms	58	24	11	8	100
Large	21	36	25	19	100
Medium	34	35	18	13	100
Small	55	26	11	8	100
Very small	73	16	7	4	100
	Debt				
All farms	5	32	32	31	100
Large	3	27	33	38	100
Medium	5	34	32	29	100
Small	8	37	29	26	100
Very small	8	38	31	23	100
	Assets				
All farms	47	32	14	8	100
Large	27	38	22	14	100
Medium	38	38	16	8	100
Small	61	26	8	4	100
Very small	74	18	6	3	100

1. Estimates shown are based on data from Bureau of the Census, 1979 Farm Finance Survey, as tabulated by U.S. Department of Agriculture, Economic Research Service, and adjusted and updated by the author. Comparison of assets and debt reported by operators in the survey with estimates of these items made by USDA and the author indicated that total assets had been underreported by 18 percent, and total debt by 31 percent. For 1980–83, estimates made by USDA and the author indicated that the value of assets covered by the survey had increased 9 percent, and the amount of debt 28 percent. These adjustments therefore raised debt–asset ratios above those found in the original survey.

2. Farms are classified by size according to the typical annual value of farm products sold, as follows: large, $200,000 and over; medium, $40,000 to $199,999; small, $10,000 to $39,999; and very small, under $10,000.

One summary finding from the adjusted survey data suggests the nature of farm credit difficulties: 83 percent of total debt owed by operators is owed by the 29 percent of operators with debt-asset ratios that exceed the average for all operators (23.3 percent). Thus the bulk of farm debt is owed by a sizable minority of operators whose relative debt is large enough that, at current interest rates, scheduled debt service may easily exceed income from assets. Until the current gap between the average rate of return to assets and farm loan interest rates is significantly narrowed these borrowers and their lenders will continue to face debt-service problems.

EXPERIENCE OF RURAL BANKS

The financial problems faced by the heavily indebted operators who owe much of farm debt have fostered questions about the condition of rural banks with a concentration in farm lending. Such concerns may be grounded in part on experience after earlier farm booms in which credit played a prominent role. During the 1920s, for example, many farmers were unable to service bank loans they had obtained to finance capital spending during and immediately after World War I, when increased export demands had stimulated production. About 6,000 banks (about one-fifth of all banks) failed during that decade, most of them in rural areas.

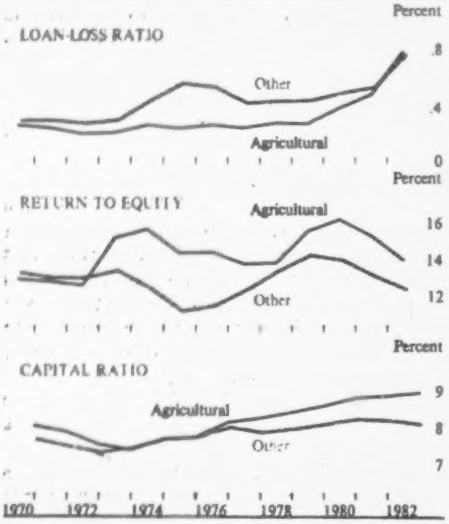
Conditions at rural banks have been much different in this post-boom period. In particular, federal deposit insurance has virtually eliminated the runs on banks that once would have threatened their survival soon after loan-loss problems surfaced. Also, most rural banks prospered along with their farm customers, substantially improving their profit and capital positions. Lately, however, loan losses have risen noticeably.

To examine the experience and condition of banks with relatively heavy involvement in farm lending, data were compiled for "agricultural" banks, at which total farm loans accounted for 25 percent or more of total outstanding loans. Although the number of such banks has been decreasing, there are still about 4,300 of them, accounting for 30 percent of all commercial banks, and they hold two-thirds of the farm loans in the banking system even though they hold only 6 percent of banking resources. For comparison, data were also compiled for other smaller banks (assets under $500 million).

Loan Losses

During the 1970s, loan losses reported by agricultural banks clearly reflected the favorable credit experience of most farmers and farm-related businesses. Provision for loan losses averaged 0.2 percent of outstanding loan volume during that decade, well below the average at other smaller banks, at which losses rose substantially during the business recession of 1974–75 (see chart 8). Notably, the ratio of loan losses did not rise as a result either of the problems of livestock producers that began in 1974, or of those of crop

8. Financial experience at agricultural and other smaller banks



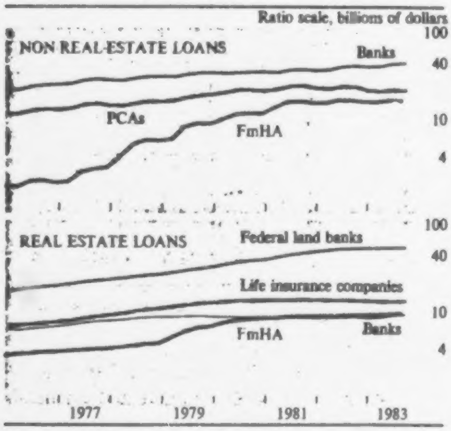
Data are for banks with total assets under $500 million on December 31. Agricultural banks are banks at which farm loans (loans secured by farm real estate and other loans to farmers) accounted for 25 percent or more of total loans outstanding on December 31.

Loan-loss ratio is the annual provision for loan losses as a percentage of total loans outstanding on December 31.

Return to equity is net income after taxes as a percentage of the average of equity at the beginning and end of the year.

Capital ratio is capital and surplus as a percentage of total assets, December 31.

9. Farm loans outstanding at major institutional lenders



producers in 1976–77. Many of the troubled farm loans of this period, which otherwise might have caused losses for the banks, were refinanced by the Farmers Home Administration (FmHA) under several credit programs: disaster loans, made mostly to farmers with crop losses caused by drought; the Emergency Livestock Credit Act of 1974; and the Economic Emergency Credit Act of 1978 and its extension, under which the FmHA lent about $6.6 billion from 1978 to 1981. Chart 9 illustrates the relatively large increases in FmHA lending during these years.

The loan-loss picture at agricultural banks changed significantly during 1980–82 as increasing numbers of farm borrowers came under financial stress and farm-related businesses were hit by the downturn in farm income and by two general business recessions. By 1981, the provision for loan losses had doubled from its earlier low level, and in 1982 it rose further, to 0.8 percent of outstanding loans, putting it slightly above that at other smaller banks.

As in previous years, the distribution of agricultural banks by loan losses was highly skewed: the average loss ratio was raised because heavy losses occurred at some banks while a majority reported relatively small losses. In 1982, one-fourth of agricultural banks required little or no provision for losses—less than 0.1 percent of outstanding loan volume (table 5). At the other extreme, 5 percent of the banks had to provide for losses greater than 2.5 percent of outstanding loans, the level at which losses would begin to exceed net income before losses at a typical agricultural bank. In contrast, in no year of the 1970s did more than 1 percent of agricultural banks have such heavy losses.

Bank Profits

The profitabilty of agricultural banks is a summary indicator that quickly reflects the net effect of loan losses and other factors affecting overall condition. Over time, bank profitability is impor-

5. Percentage distribution of agricultural banks, by provision for loan losses, 1970–82[1]

Year	Provision for loan losses as percentage of loans at bank[2]						
	Under 0.10	0.10 to 0.39	0.40 to 0.69	0.70 to 0.99	1.00 to 2.49	2.50 and over	Total
1970	49	28	14	5	4	1	100
1971	51	27	13	4	4	1	100
1972	54	27	12	3	4	*	100
1973	52	26	14	4	3	*	100
1974	49	29	14	4	4	1	100
1975	51	29	13	4	3	1	100
1976	45	33	14	4	4	1	100
1977	50	30	12	4	4	1	100
1978	43	35	12	4	5	1	100
1979	38	39	13	5	5	1	100
1980	33	34	17	7	8	2	100
1981	31	29	19	7	11	3	100
1982	25	24	18	10	18	5	100

1. Agricultural banks are banks with total assets under $500 million at which farm loans accounted for 25 percent or more of total loans on December 31 of the year specified.

2. Annual provision for loan losses as a percentage of total loans outstanding on December 31.

*Less than 0.5 percent.

6. Percentage distribution of agricultural banks by return to equity, 1970–82[1]

Year	Net income as percentage of average equity at bank[2]							
	Negative	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 and over	Total
1970	1	5	24	43	21	5	2	100
1971	1	5	26	41	20	4	2	100
1972	1	6	28	43	18	4	1	100
1973	*	2	12	39	33	10	4	100
1974	1	2	12	34	34	13	5	100
1975	2	4	15	38	30	9	2	100
1976	1	4	14	41	31	8	2	100
1977	1	4	16	45	27	5	1	100
1978	1	3	14	47	28	6	1	100
1979	1	2	8	36	38	12	3	100
1980	1	2	9	31	36	15	6	100
1981	2	3	11	31	33	13	7	100
1982	3	5	15	33	29	11	4	100

1. Agricultural banks are banks with total assets under $500 million at which farm loans accounted for 25 percent or more of total loans on December 31 of the year specified.

2. Net income after taxes as a percentage of the average of equity at the beginning and end of the year.

*Less than 0.5 percent.

tant because adding to retained earnings is the major way in which rural banks expand their capital position and thus maintain or improve their ability to serve growing communities and businesses. The average return to equity at agricultural banks rose sharply with farm prosperity in 1973 and remained at a relatively high level through 1982 (chart 8). In addition to reflecting favorable agricultural income, the cyclical pattern traced by profits at agricultural banks indicates that these banks, on balance, benefited during periods when interest rates were relatively high in national money markets. Their deposits rose steadily even during such periods—for example, approximately 10 percent in each year from 1978 to 1982—and the influx of funds evidently was employed profitably. Average return to equity reached 16 percent in 1974 and again in 1979–80. By 1982, primarily because of increased provision for greater loan losses, return to equity had declined to 14 percent.

Even in the face of heavier loan losses, relatively few agricultural banks were operating at a loss. At such banks, however, extraordinarily high loan losses were most often the cause of the operating loss. In 1982, negative earnings were posted by 3 percent of agricultural banks (table 6). At these banks, the provision made for loan losses averaged 4.2 percent of outstanding loan volume. But even during that year of farm and business recession, 77 percent of agricultural banks achieved a return of 10 percent or more on equity. Although down from 91 percent in 1979, this high a proportion of institutions able to achieve such profitability during relative adversity attests to the market strength and financial resilience of these banks.

Capital Ratios

A considerable portion of the profits of agricultural banks—about two-thirds in 1982—are annually added to bank capital rather than paid out as dividends to stockholders. From 1974 through 1982, equity grew faster than deposits and assets on average, and thus the average capital ratio rose (chart 8). By the end of 1982, capital and surplus at these banks averaged 8.9 percent of total assets, up from the cyclical low of 7.4 percent recorded after the large inflow of farmers' deposits in 1972 and 1973.

The growth of capital at individual banks is of particular importance because it determines how much a bank can increase, over time, the amount it can legally and prudently lend to each borrower. During the five years ending in 1982, the value per farm of assets other than real estate rose 60 percent, and average outstanding farm production loans rose 68 percent. Capital at rural banks kept pace: at banks classified as agricultural banks in 1982, capital and surplus expanded 75 percent over the same period. Thus, on average, increases in the size of loans that agricultural banks can make have approximately matched increases in the size of loans demanded by farmers.

Recent changes in bank legislation have further enhanced the lending capability of rural banks. The upper limit on the amount that a national bank can lend to one borrower was raised from 10 to 15 percent of capital and surplus (a special higher limit of 25 percent continues to apply if the loans are secured by livestock). Of more general importance, the increase in federal insurance on individual deposits to $100,000 had the incidental effect of making the negotiable certificates of deposit of small banks salable to national investors, either directly or through intermediaries that ensure that each investor holds no more than one certificate of each bank. Furthermore, because most new local deposits now bear interest related to money market rates, rural banks no longer find that funds raised in money markets are more costly than local deposits, as they did during earlier periods of relative monetary restraint. Thus the ability of rural banks to respond to seasonal, cyclical, or unusual changes in local loan demand has been improved.

As in the past, the experience of many rural banks will be related to that of agriculture. The banks appear well-positioned to cope with near-term agricultural developments. Their strong capital and profit positions will help them weather some further deterioration in the financial situation of their more heavily indebted farm borrowers. At the same time, their liquidity has been renewed during four years of steady deposit growth and slower loan demand. Agricultural banks now have ample capital and liquidity to respond vigorously to increased loan demand during this year's upswing in farm production. ☐

Agriculture and the Budget (with appendix) by Geoff Becker. Washington, Congressional Research Services, 1986. 11 p. (Issue brief ib86037)

ISSUE DEFINITION

Programs of the U.S. Department of Agriculture (USDA) will be affected by congressional efforts this year to reduce the Federal budget deficit. Department officials are preparing to implement some $1.3 billion in FY86 across-the-board reductions under the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177), also known as Gramm-Rudman-Hollings.

Additional decreases are possible for FY87. The President's proposed budget for next year would lower USDA's program level by 12% and its cash outlays by 18% from the FY86 amounts. Congress has not endorsed most of the President's prior recommendations for sharp cuts in food and agriculture spending; many of these have been revived in the new budget. This issue brief describes these proposals and also discusses the effects on USDA of Gramm-Rudman-Hollings.

BACKGROUND AND POLICY ANALYSIS

The Federal deficit problem will loom over most agricultural policy deliberations for the rest of the 99th Congress, and possibly beyond. Farm and food interests on Capitol Hill already had focused much of their attention in early 1986 on two budget-related developments: the required $1.3 billion in across-the-board cuts at USDA to comply with the sequestration order under the new balanced budget act, and the President's February 5 budget proposal, which would cut food and farm programs by large amounts in FY87.

The $1.3 billion in reductions (representing 4.3% of the Department's eligible base) were ordered on February 1, and officials are working to implement them prior to Mar. 1, 1986, when they formally take effect. This work is proceeding even though a Federal court ruled on Feb. 7, 1986, that a key provision of the balanced budget law is unconstitutional (the court suspended the effects of its decision until the Supreme Court could review the case).

The automatic reductions will touch all agencies and programs of the Department except food stamp and child nutrition benefits, which the law exempts (food stamp and child nutrition administrative outlays are subject to cuts). Thus, commodity price and income supports, agricultural research and extension, marketing and inspection services, farm credit programs -- in short, virtually all of the services used by farm and rural residents (as well as some urban citizens) will be cut.

However, farm and food program decreases potentially might be more severe in FY87, particularly if Congress is unable, through its regular appropriations and budget deliberations, to meet the Gramm-Rudman-Hollings target (no more than a $144 billion deficit for the year). If the automatic trigger provisions of the deficit reduction law are maintained by the Supreme Court, then USDA might be subjected to across-the-board reductions of as much as 20-25%, by some preliminary estimates.

Regardless of whether the trigger mechanism is used, however, lawmakers will be seeking a lower deficit. The relatively high cost of USDA's programs compared with prior years could make them a prominent target for new reductions in the coming year -- despite enactment late in 1985 of an omnibus measure extending major farm and food programs for 5 years (for details on this measure see IB86013 -- The 1985 Farm Bill: A Summary). For example, USDA estimates the cost of the Commodity Credit Corporation's (CCC's) price and income support programs alone at $54 billion from FY86-88; several private forecasts indicate this estimate could be $10 to $15 billion too low. Still, this amount would exceed the record $44 billion price tag for these programs from FY83-85.

The President's FY87 budget would achievo USDA savings not by further amendments to the farm price support programs. Rather, it would reduce spending in other parts of the USDA budget, including farm credit, conservation domestic nutrition assistance, extension services, and rural housing and development. Administration officials contend that the programs targeted for reductions are less essential -- or should be supported through non-Federal funds -- in light of the critical need to reduce the deficit.

The programs' supporters, however, are likely to argue that various USDA activities were already reduced in prior budget-cutting efforts. Any new reductions should be avoided, or at least limited, they could contend. Several have already noted that all USDA outlays will represent less than 5% of total Federal outlays in FY87.

INTRODUCTION TO USDA PROGRAM FUNDING

USDA is charged with administering commodity price and income support programs that assist farmers and ranchers. It also oversees a wide range of agricultural credit, insurance, research, and economic programs that benefit not only producers but others in the food and fiber system, including consumers. The Department administers domestic food programs aimed at improving the nutrition of children and families, foreign food aid and export promotion programs, marketing and inspection activities, and programs to protect the Nation's forest, soil, and water resources. The Department carries out these responsibilities with a staff of almost 109,000 employees located in more than 30 separate agencies.

USDA's activities and programs receive their funding from a variety of sources. Annual and supplemental appropriations provide about half of the money. The remainder is in the form of permanent appropriations, trust funds, in-kind benefits (such as surplus commodities acquired earlier by the Department), offsetting receipts, and other sources.

The total financial value to the public of all of this support equals the "program level," which USDA officials believe is the most informative way to describe the total fiscal scope of the Department's activities and to measure year-to-year changes in available funding. Other measures often used to describe the Department's budget are "budget authority," representing Congress's explicit permission to commit Treasury funds (usually granted through appropriations acts); and "outlays," which are actual cash disbursements from the Treasury.

FY87 BUDGET OVERVIEW

The Reagan Administration has proposed a $65.5 billion program level for USDA in FY87, an $8.6 billion or about 12% drop from the estimated FY86 level of $74 billion. (The FY86 levels assume that the $1.3 billion in

Gramm-Rudman-Hollings reductions become effective on March 1. They also assume the 0.6% across-the-board program reductions mandated by the continuing resolution now funding USDA for the rest of FY86.) The pre-sequestration USDA program level Congress approved for FY86 was $75.9 billion, thus the FY87 Administration proposal would represent a $10.4 billion or nearly a 14% decline from that level.

The Administration is proposing no major policy changes to lower the cost of the big-ticket commodity support programs, which were just overhauled as part of the 1985 farm bill. However, proposed reductions are aimed at most other Department activities, some of which would be cut deeply or even eliminated. A number of the cost-cutting ideas are new. Others -- like new user fees, reductions in Federal credit, and more "privatization" of Government activities -- are similar to proposals advanced last year that proved unpopular with Congress.

At the Farmers Home Administration (FmHA), all rural housing and community development programs, farm ownership (but not operating) loans, and emergency disaster loans would be eliminated. The Rural Electrification Administration's utility programs would be phased out by 1990. Soil and water conservation activities of the Soil Conservation Service (SCS) and the Agricultural Stabilization and Conservation Service (ASCS) would be sharply curtailed. (However, the new long-term conservation reserve mandated by the 1985 farm bill would be implemented on schedule.)

Agricultural research programs would be continued at roughly current services, but Federal funding for the Extension Service would be reduced significantly. And the Administration has revived a number of earlier ideas for cutting domestic nutrition assistance under the Food and Nutrition Service (FNS), and CCC export credits, as well as for imposing user fees to pay for many marketing activities such as meat and poultry inspection. A closer look at these proposals follows.

Domestic Commodity Price Supports

Although other programs such as research and credit are important to America's farmers, the price and income support programs operated by the CCC are USDA's most expensive. Under the President's budget, all USDA outlays would total $44.6 billion in FY87. Just under $20 billion of that total is classified as agriculture expenditures (the balance is for nutrition programs, the Forest Service, etc.); of that $20 billion, more than $16 billion is for the CCC programs.

The CCC is required to support, under guidelines set forth by omnibus farm legislation, more than a dozen specified commodities. It has the authority to borrow not more than $25 billion from the U.S. Treasury to carry out its work. These funds are used to make commodity nonrecourse loans, to purchase and store commodities, and to provide direct payments to farmers (as deficiency or land diversion payments), among other things. At the same time, CCC receives revenues as farmers repay loans or the Corporation sells some of the surpluses it acquired earlier. At the end of any given fiscal year, the CCC almost always has disbursed more money than it has taken in; the difference is recorded as "net outlays." This measure more accurately reflects the public costs of supporting farm prices in a given year than "program level."

USDA expects CCC net outlays to decline from a record-high $20.3 billion in FY86 to $16.2 billion in FY87. Outlays for a fiscal year generally reflect activities for the prior crop year. FY86 will reach such high levels, USDA says, because of mounting surpluses of grain, cotton, and dairy products during the 1985/86 marketing year. The expected decline in FY87 is due in part to lower loan rates and the dairy herd reduction program specified by the new farm bill. It is also due to the anticipated advance payment of $2 billion in 1986-crop deficiency payments (meaning these outlays will be counted in FY86 rather than FY87). The estimates also take into account the Administration's assumptions about export performance, inflation, and other economic factors in coming years -- which, critics point out, could be proven wrong later on.

The CCC spending estimates also include projected spending of $190 million in FY86 and $550 million in FY87 for the new acreage conservation reserve mandated by the farm bill. Under this program farmers will contract with the Government to remove erodible land from cultivation over the long term. The FY87 total includes about $200 million for rental payments on the initial 5 million acres to be signed up during 1986 and $350 million for the Federal share of the cost of planting cover crops on the land.

(USDA stresses that its estimates of future CCC outlays are highly tentative. In fact, USDA's prediction issued with the President's budget rarely comes close to the actual outlays tallied at year's end. This is only partly because the Administration's economic assumptions might prove erroneous. More significantly, CCC outlays are determined not only by congressionally mandated programs but also by the weather and marke conditions, which are highly volatile.)

TABLE 1. CCC Net Outlays by Commodity (dollars in millions)

Commodity	FY83	FY84	FY85	FY86	FY87
Feed Grains	$6,815	-$758	$5,211	$8,535	$5,824
Wheat	3,419	2,536	4,691	2,862	2,981
Rice	664	333	989	961	1,018
Cotton, Upland	1,363	244	1,553	1,913	1,914
Tobacco	880	346	445	-39	-130
Dairy	2,528	1,502	2,085	1,787	1,556
Soybeans	288	-585	711	1,495	155
Honey	48	90	81	82	74
Wool	94	132	109	119	114
Other	2,752	3,475	1,798	3,048	3,089
Subtotal, CCC Net Outlays	18,851	7,315	17,683	20,763	16,595
Sequestration under P.L. 99-177	--	--	--	-414	-409
Total	$18,851	$7,315	$17,683	$20,349	$16,186

SOURCE: U.S. Department of Agriculture. 1987 Budget Summary.

The CCC makes some outlays it can never recover (e.g., direct payments to farmers), and thus must record them as net realized losses. These losses periodically must be replenished through a congressional appropriation so that the Corporation will not deplete its full $25 billion in borrowing authority, which would leave it unable to function. In the past, Congress has provided this money through the regular annual USDA appropriation bill.

However, in recent years, farmers' heavy reliance on Federal commodity assistance, and more specifically the buildup of commodity loans and inventories, has forced the CCC to come to Congress more often to keep it solvent. In December 1985, Congress provided some $13 billion. In early February, USDA requested yet another nearly $7.95 billion to carry the Corporation through the balance of the FY86 (USDA later increased this request to $8.85 billion). The CCC temporarily ran out of money about February 5, and the following day Congress agreed to provide about $1.5 billion, or just part of the total needed for the rest of the year.

As what it calls a "long-term solution" to this chronic funding shortage, the Administration has proposed that Congress grant the CCC "permanent indefinite authority" to be reimbursed for its losses as needed. However, some congressional budget leaders argue that this action might signify a retreat from their oversight responsibilities. One compromise suggested by several lawmakers would be to increase CCC borrowing authority to $40 billion.

Farm Credit, Rural Development, and Crop Insurance

FmHA serves as a lender of last resort for agricultural producers who are unable to obtain credit elsewhere; the agency currently holds about 12% of all farm debt. Farmers can apply for loans -- either directly or from private sources that FmHA guarantees -- for farm ownership or improvement, or to meet short-term operating expenses. Separate emergency disaster loans available at subsidized interest rates assist producers hit by natural disasters.

For FY87, the Administration intends to submit legislation to terminate all farm ownership loans, for which $638 million is available this year. It also proposes an end to all emergency disaster loans, for which $1.24 billion is available in FY86. The 1985 farm bill will effectively curtail most disaster loans, beginning in calendar year 1987.

Farm operating loans would climb from a program level of $3.164 billion in FY86 to $4 billion in FY87. FmHA farm operating loans reached a record $4.707 billion in FY85. Demand is expected to be high in FY86, too. However, the Administration intends to continue its shift away from direct lending and toward guaranteed credit. Nearly two-thirds of all operating loans would be guaranteed in FY87, compared with about a fourth in FY85. Guaranteed loans cost borrowers more but result in lower Federal outlays.

FmHA also provided a total of $3.572 billion in rural housing and community development loans and grants in FY85. The Administration estimates that these programs will decrease to $2.181 billion in FY86 and proposes to eliminate them for FY87. Rural Electrification Administration (REA) telephone and electic loans are slated for more gradual elimination -- by 1990 -- with the FY87 program level dropping from a current $2 billion to $804 million. Meanwhile, REA wants to assess a 5% user fee on direct loans to replace appropriations for its salaries and expenses.

Finally, for the Federal Crop Insurance Corporation (FCIC), the Administration has renewed last year's proposal that all Federal subsidies for crop insurance premiums be phased out over the next 5 years. Beginning in FY87, user fees would have to pay for all administrative expenses.

International Programs

The CCC account also includes funding for a variety of export credit programs aimed at selling more U.S. agricultural products overseas. The new farm bill expanded these programs, with (after application of FY86 sequestration) nearly $4.8 billion in short-term and $479 million in intermediate-term credit guarantees available this year. The Administration's budget anticipates the passage of legislation -- to be proposed shortly -- to reduce the short-term program to $3 billion and to eliminate intermediate term guarantees in FY87. The legislation also will call for a 5% loan origination fee, which also was unsuccessfully proposed last year.

Despite these and other export program cutbacks, the Administration assumes that agricultural exports will rise next year as U.S. farm commodities become more competitive due to the lower loan rates set by the 1985 farm bill.

P.L. 480, the Food for Peace Program, provides under Title I long-term, low-interest financing of U.S. agricultural sales to developing countries and under Title II food donations to combat hunger overseas. Total P.L. 480 funding would decline from $1.74 billion (which reflects sequestration) this year to $1.54 billion in FY87, according to the Administration's budget.

Next year's funding would provide for shipment of about 5.3 million metric tons of food under Title I and 1.9 million tons under Title II. USDA says the decline in overseas aid is due partly to "the expectation that food aid needs in sub-Saharan Africa will continue to decline from the extraordinary levels of recent years" and also to reduced costs due to lower loan rates.

Soil and Water Conservation

As it did last year, the Administration is again proposing a major retrenchment in Federal funding for soil and water conservation activities (notwithstanding implementation of the long-term conservation reserve; see above). These programs are now carried out by SCS and ASCS.

The new budget recommends termination of 19 of 23 specific SCS programs; only the technical assistance, soil survey, snow survey and operation and plant materials centers programs would be refunded at approximately their current levels. The overall SCS budget would decline from $666.8 million in FY86 to $350.6 million in FY87; however a one-time additional appropriation of $106.5 million would be needed to close the 19 targeted programs. SCS staffing would decline from 14,000 to about 10,000 under the Administration's budget, which also calls for $67 million in FY86 program rescissions.

ASCS cost-sharing programs received $219.2 million in FY85, of which $190.3 million was allocated to the Agricultural Conservation Program. The new budget proposes FY86 rescissions in order to limit these ASCS cost-sharing programs to $111 million, including $76.6 million for the ACP. No ASCS cost-sharing funds would be provided for FY87.

Forest Service

Although the Forest Service is located within USDA, its budget is funded annually through the Interior rather than Agriculture appropriations bill. Under the Administration's proposal, the agency's budget would decline from $2.187 billion in FY85 to $1.965 billion in FY86, and then to $1.735 billion in FY87. Reductions are proposed in research, State and private forestry, reforestations, fire protection and recreation as well as in payments to States of Forest Service receipts.

Research and Extension

USDAs in-house research programs are conducted by the Agricultural Research Service (ARS), with work conducted at 135 locations in the United States and overseas. ARS funding would be increased slightly, from $486. million in FY86 to $515.1 million in FY87. Roughly half of this increase is to restore ARS research to original FY86 levels before sequestration. Two new FY87 initiatives are included, however: a $10 million increase for work focusing on new food and non-food uses of surplus agricultural commodities; and a $3.5 million effort strengthening agency research on plant germplasm.

Other reseach and extension funding would decline next year, however. The Cooperative State Research Service (CSRS), which channels formula grant funds for agricultural research to State agricultural experiment stations and other other eligible institutions, would receive $246.4 million in FY87, a decrease of $32.6 million from the FY86 level. Most of the decline is because the Administration is requesting no money for special research grants, which took $29 million this year. Several smaller programs are slated for elimination too.

The Extension Service (ES), which assists States in providing the results of USDA research and knowledge to farms and rural homes, would take a major budget cut under the Administration's FY87 proposal. Overall funding would decline from $328 million in FY86 to $140 million in FY87. The decrease includes a $112.4 million cutback in the general formula grant programs, as well as elimination of all earmarked programs (including the popular Expanded Food and Nutrition Education Program) that cost $75.3 million in FY86. The Administration argues that given budgetary constraints, ES funding should be "primarily to assist farmers to enhance farm profitability and conserve soil and water resources;" other so-called "secondary" activities -- such as advice on lawn and garden care and home economics -- should be funded only after farmers' needs are met.

Marketing and Inspection

USDA also is charged with numerous responsibilities in monitoring the shipping, marketing, and processing of agricultural products. The proposed budget revives the Administration's FY86 goal of increased reliance on user fees or other non-Federal funds to compensate for a decrease in Federal funding of most programs. Expanded user fees did not prove popular on Capitol Hill last year.

For example, the budget proposes that the work of the Food Safety and Inspection Service (FSIS), which is responsible for inspecting and assuring the safety of all meat and poultry products, be funded entirely by user fees beginning in FY87, saving the Federal Government some $350 million next year. The last Administration budget would have phased in user fees over several years.

The budget of the Animal and Plant Health Inspection Service (APHIS), which protects the Nation's animal and plant resources from economically dangerous pests and diseases, would decline by about $50 million to $260 million in FY87. Such programs as animal welfare, imported fire ant, noxious weeds, pseudorabies, witchweed and horse protection are targeted for elimination, and user fees would be imposed for such services as lab tests and the monitoring of imports and exports.

User fees also will be established or expanded for programs under the Agricultural Marketing Service, Packers and Stockyards Administration, Federal Grain Inspection Service, and Agricultural Cooperative Service.

Domestic Food Programs

FNS administers 12 major programs providing food assistance to individuals living in the United States or its territories. They are operated on a day-to-day basis primarily by State and local agencies, who channel benefits either directly to individual families or through institutional feeding activities. This aid in FY86 will consume about a third of the Department's outlays and about a fourth of its program level.

The President's budget foresees holding spending for food stamps, the largest of these programs, near their FY86 level of roughly $12.5 billion (including the $825 million Puerto Rico nutrition block grant). This estimate assumes a reduced unemployment rate and minimal food price inflation, both key determinants of food stamp costs. It also assumes the passage of new legislation that would shift some administrative costs to States and eliminate the benefit increases and liberalized eligibility enacted as part of the 1985 farm bill.

In the child nutrition area, the Administration has renewed its push to eliminate all Federal support for meals served to so-called "non-needy" children -- those from families earning above 185% of the official poverty line. This proposal, affecting the school lunch and breakfast and child care food programs, along with other changes in child nutrition, would save an estimated $775 million below what would otherwise be spent in FY87, according to USDA.

The women, infants and children (WIC) food program would be funded at about $1.6 billion in FY87, which the Administration contends will support a caseload of 3 million, the same as in FY86. Most special milk program funding would be eliminated, and States would receive no Federal money to administer the Temporary Emergency Food Assistance Program, which channels surplus USDA commodities to the needy.

Appendix A shows the Administration's estimates of FY85-87 spending for each USDA program. The FY86 estimates assume implementation of the required Gramm-Rudman-Hollings cuts and also approval of a number of

Administration-proposed program rescissions.

USDA AND GRAMM-RUDMAN-HOLLINGS

The Balanced Budget and Emergency Deficit Control Act of 1985 requires that the Federal budget deficit be reduced in specified steps to zero by FY91. Whenever the Congressional Budget Office (CBO) and the Office of Management and Budget (OMB) predict prior to the start of the new fiscal year that the sum total of normal congressional appropriations, authorization, and revenue measures will miss these targets, the "sequestration" process would be set in motion.

For FY86, cuts totalling $11.7 billion were ordered on Feb. 1, 1986, to take effect March 1. USDA must assume $1.3 billion, or more than 20% of the $5.85 billion in nondefense reductions. This relatively large share is mainly because only about $105 billion of the roughly $600 billion in Federal nondefense spending is subject to sequestration. (USDA represents about $29 billion of this unprotected base.)

Of this $1.3 billion, $824 million represent savings in the CCC commodity price support programs. The balance of the $1.3 billion reduction is being taken from all remaining eligible USDA programs.

The balanced budget law contains a number of special provisions on how to reduce CCC spending, due to the peculiarities of commodity program funding and operations. For example, the law recognizes that CCC outlay savings from any given sequester may occur in a subsequent year. It stipulates that these outlay savings should therefore be credited to the overall outlay reduction required in the sequester year (about half of the 1986 CCC savings of $824 million will occur in FY87, for example).

The law also stipulates that no CCC-supported commodities can be subjected to a larger reduction than any other commodity and that USDA in implementing the cuts must attempt to minimize any agricultural market distortions, among other special language.

In a separate measure (the continuing resolution that is now funding USDA programs for the rest of FY86), the Appropriations Committees provided that in implementing the cuts, the Department is to apply the specifed percentage reduction (for this year, 4.3%) to each and every line item specified in the budget notes that USDA submits each year to Congress. The intent is to assure that no activity, regardless of how much it receives, is subjected to any larger or smaller cutback than any other program. Appendix B shows the original FY86 spending bases for each "sequesterable" USDA program and how much they must be reduced.

One area that has raised some controversy is USDA work funded through user fees. The Gramm-Rudman-Hollings law does not exempt these activities -- such as USDA's grain inspection, meat and produce grading, and the like -- from sequestration, even though they are conducted almost entirely on a fee-for-service basis rather than through simple Federal funding. Critics have pointed out that service cutbacks could result in less revenues to the Government -- meaning that no real deficit reduction might occur.

The Department as of mid-February was just beginning to implement the sequestration order. Agricultural interests have focused much of their attention on the CCC commodity programs. Administration officials announced on Feb. 11, 1986, that they intend to lower outlays in these programs through what one termed "a giant discounting mechanism," rather than a redesign of existing programs. For example:

-- To meet the reduction requirements, USDA will not change the terms of these programs at the outset but operate them basically as specified in the 1985 farm bill. However, the checks that farmers receive later for participating in these programs -- whether for direct deficiency and diversion payments or for nonrecourse loans -- will be reduced by 4.3%. This reduction will affect such commodities as wheat, feed grains, cotton, rice, soybeans, peanuts, honey, and so forth.

  For example, if a soybean farmer offers 10,000 bushels of his crop as collateral for a nonrecourse loan at the 1986 rate of $5.02 per bushel, rather than receive the full $50,200, he would receive 4.3% less, or $48,041. Or, a cotton producer who would have been entitled direct payments totalling $38,000, for example, would receive $36,366.

-- In the dairy program, USDA intends to reduce the current per-pound prices it now offers for nonfat dry milk, cheese, and butter by 4.3%. As a result, the price per pound for cheese, for example, will drop from $1.25 to about $1.20 per pound. The so-called "whole herd buyout" program, under which farmers submit bids to USDA for payments to leave dairying, will not be changed by Gramm-Rudman-Hollings. (Dairy interests in Congress were in late February promoting legislation to allow them to increase the assessment on milk marketings in place of the price cuts.)

-- Annual rental payments to farmers participating in the long-term acreage conservation reserve also will not be sequestered, although Federal cost-sharing payments for cover crops on that land will be.

-- Payment-in-kind (PIK) assistance, (the provision of USDA surplus commodities in lieu of cash) will not be subject to sequestration.

-- USDA is required by the new farm bill to purchase 400 million pounds of red meat (over and above what it already buys under existing law) during the whole herd buyout program. This quantity will be reduced by 4.3%.

Several other USDA agencies implementing the reductions face staff furloughs. These include SCS and FSIS, according to USDA budget officials.

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APPENDIX A

UNITED STATES DEPARTMENT OF AGRICULTURE
Program Levels and Outlays
(Dollars in Millions)

Agency/Program	Program Levels 1985	Program Levels 1986 Current Estimate	Program Levels 1987 Budget	Program Levels Change 1986 to 1987	Outlays 1985	Outlays 1986 Current Estimate	Outlays 1987 Budget
Research and Education							
Agricultural Research Service	495	480	515	+35	489	477	511
Cooperative State Research Service	304	279	246	-33	243	279	249
Extension Service	344	328	140	-188	338	331	179
National Agricultural Library	11	11	11	- -	10	11	11
Research Construction	22	6	- -	-6	6	18	38
Total, Research and Education	1,176	1,104	912	-192	1,036	1,116	988
Commodity Programs							
Commodity Credit Corporation*	23,723	27,963	24,980	-2,983	17,683	20,349	15,186
ASCS, Salaries and Expenses*	395	455	417	-38	71	20	4
Total, Commodity Programs	24,118	28,418	25,397	-3,021	17,754	20,369	15,190
International Programs							
Export Credit Guaranteed Loans*	4,485	5,264	3,000	-2,264	- -	- -	- -
General Sales Manager*	6	6	6	- -	- -	- -	- -
P.L. 480	2,105	1,740	1,544	-196	1,715	1,373	1,158
Foreign Agricultural Service	85	82	74	-8	76	81	70
Office of Internat'l Cooperation and Development	13	11	6	-5	19	15	11
Total, International Programs	6,694	7,103	4,630	-2,473	1,310	1,469	1,239
Soil and Water Conservation Programs							
Soil Conservation Service	621	571	457	-114	691	640	597
Acreage Conservation Reserve (CCC)*	- -	190	550	+360	(- -)	(190)	(550)
Agricultural Stabilization and Conservation Service, Financial Assistance	219	111	- -	-111	222	201	64
Total, Soil and Water Conservation	840	872	1,007	+135	913	841	661
Forest Service	2,276	2,144	1,735	-409	2,242	2,226	1,781
Small Community and Rural Development							
Farmers Home Administration:							
Farm Programs:							
Farm Operating Loans	4,707	3,164	4,000	+836	5,440	3,048	1,497
Farm Ownership and Other Loans	735	684	- -	-684			
Emergency Disaster Loans	491	1,244	- -	-1,244			
Investment Buy Down Programs	- -	115	185	+70			
Community Development Programs	648	632	- -	-632	1,318	1,261	1,156
Housing Programs	2,923	1,549	- -	-1,549	3,995	3,359	1,711
Salaries and Expenses	413	434	432	-2	340	358	381
Subtotal, Farmers Home Administration	9,917	7,322	4,617	-3,705	11,393	8,026	4,754
Interest Subsidies and Other Costs	3,494	3,473	5,891	+2,418	- -	- -	- -
Rural Electrification Administration:							
Electric Loans	537	1,436	600	-836	1,276	1,045	1,304
Telephone Loans	392	536	199	-337			
Salaries and Expenses	28	29	5	-24	27	30	6
Subtotal, Rural Electrification Admin.	1,057	2,001	804	-1,197	1,303	1,075	1,310
Interest Subsidies and Other Costs	594	213	150	-63	246	40	-19
Federal Crop Insurance Corporation	856	886	684	-202	506	557	236
Office of Rural Development Policy	2	- -	- -	- -	2	1	- -
Total, Small Community and Rural Development	15,720	14,395	12,146	-2,249	13,150	9,599	6,251

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Agency/Program	Program Levels 1985	1986 Current Estimate	1987 Budget	Change 1986 to 1987	Outlays 1985	1986 Current Estimate	1987 Budget
Food and Consumer Services							
Food and Nutrition Service:							
Food Stamp Program	11,732	11,593	11,588	-5	11,701	11,667	11,504
Nutrition Assistance for Puerto Rico	425	420	425	+5	425	420	425
Child Nutrition Programs	4,136	4,224	3,829	-395	4,002	4,214	3,951
Special Supplemental Food Programs:							
Women, Infants and Children Program	1,504	1,560	1,617	+57	1,495	1,581	1,613
Commodity Supplemental Food Program	38	41	39	-2	43	37	39
All Other	329	318	274	-44	316	341	281
Total, Food and Nutrition Service	18,574	18,656	18,272	-384	18,332	18,564	[illegible]
Human Nutrition Information Service	7	13	7	-6	7	11	7
Section 32 Funds	245	205	234	+29	139	27	- -
Total, Food and Consumer Services	18,826	18,874	18,513	-361	18,529	18,772	[illegible]
Marketing and Inspection Programs							
Animal and Plant Health Inspection Service	306	313	250	-50	305	312	234
Food Safety and Inspection Service	365	347	367	+20	360	347	- -
Agricultural Marketing Service	137	141	147	+6	124	131	85
All Other	56	58	57	- -	77	71	1
Total, Marketing and Inspection Programs	874	856	833	-23	[illegible]	[illegible]	375
Economics and Statistics	107	102	107	+5	103	93	106
Departmental Management and Administration							
Departmental Offices	99	97	100	+3	93	97	94
Other Operating Costs	74	73	84	+11	74	71	83
Receipts					-1,234	-1,244	[illegible]
USDA, GRAND TOTAL	71,004	74,038	65,463	-8,575	55,523	[illegible]	44,672
*Funded through the Commodity Credit Corporation. Totals for CCC are	24,558	33,878	29,453	425	17,583	25,144	16,186

SOURCE: U.S. Department of Agriculture, 1987 Budget Summary.

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APPENDIX B

UNITED STATES DEPARTMENT OF AGRICULTURE
Reconciliation of 1986 Sequester
(Dollars in Millions)

Agency/Program	Program Levels			Outlays		
	1986	Sequester	1986 Estimate	1986	Sequester	1986 Estimate
Research and Education						
Agricultural Research Service	502	-22	480	494	-17	477
Cooperative State Research Service	291	-12	279	287	-8	279
Extension Service	343	-15	328	343	-12	331
National Agricultural Library	12	-1	11	11	- -	11
Research Construction	6	- -	6	18	- -	18
Total, Research and Education	1,154	-50	1,104	1,153	-37	1,116
Commodity Programs						
Commodity Credit Corporation	28,758	-795	27,963	20,763	-414	20,349
ASCS, Salaries and Expenses	473	-18	455	22	-2	20
Total, Commodity Programs	29,231	-813	28,418	20,785	-415	20,369
International Affairs						
Export Credit Guaranteed Loans	5,500	-236	5,264	- -	- -	- -
General Sales Manager	6	- -	6	- -	- -	- -
P.L. 480	1,796	-56	1,740	1,439	-66	1,373
Foreign Agricultural Service	86	-4	82	83	-2	81
Office of International Cooperation and Development	11	- -	11	15	- -	15
Total, International Affairs	7,399	-296	7,103	1,537	-68	1,469
Soil and Water Conservation Programs						
Soil Conservation Service	600	-29	571	664	-24	640
Acreage Conservation Reserve (CCC)	190	- -	190	- -	- -	- -
Agricultural Stabilization and Conservation Service, Financial Assistance	120	-9	111	204	-3	201
Total, Soil and Water Conservation	910	-38	872	868	-27	841
Forest Service	2,231	-87	2,144	2,298	-72	2,226
Small Community and Rural Development						
Farmers Home Administration:						
Farm Programs:						
Farm Operating Loans	3,312	-148	3,164)			
Farm Ownership and Other Loans	708	-24	684)			
Emergency Disaster Loans	1,300	-56	1,244)	3,127	-89	3,048
Investment Buy Down Programs	120	-5	115)			
Community Development Programs	660	-28	632	1,262	-1	1,261
Housing Programs	1,650	-101	1,549	3,409	-50	3,359
Salaries and Expenses	450	-16	434	373	-15	358
Subtotal, Farmers Home Administration	8,200	-378	7,822	8,180	-155	8,025
Interest Subsidies and Other Costs	3,473	- -	3,473	- -	- -	- -
Rural Electrification Administration:						
Electric Loans	1,500	-64	1,436)	1,049	-4	1,045
Telephone Loans	560	-24	536)			- -
Salaries and Expenses	30	-1	29	31	-1	30
Subtotal, Rural Electrification Admin.	2,090	-89	2,001	1,080	-5	1,075
Interest Subsidies and Other Costs	213	- -	213	40	- -	40
Federal Crop Insurance Corporation	895	-9	886	563	-6	557
Office of Rural Development Policy	- -	- -	- -	1	- -	1
Total, Small Community and Rural Development	14,871	-476	14,395	9,864	-166	9,698

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Agency/Program	Program Levels 1986	Program Levels Sequester	Program Levels 1986 Current Estimate	Outlays 1986	Outlays Sequester	Outlays 1986 Current Estimate
Food and Consumer Services						
Food and Nutrition Service:						
Food Stamp Program	11,696	-3	11,693	11,668	-1	11,667
Nutrition Assistance for Puerto Rico	820	- -	820	820	- -	820
Child Nutrition Programs	4,224	- -	4,224	4,218	- -	4,218
Special Supplemental Food Programs:						
Women, Infants and Children Program	1,560	- -	1,560	1,581	- -	1,581
Commodity Supplemental Food Program	41	- -	41	37	- -	37
All Other	330	-12	318	353	-12	341
Total, Food and Nutrition Service	18,671	-15	18,656	18,677	-13	18,664
Human Nutrition Information Service	13	- -	13	11	- -	11
Section 32 Funds	221	-16	205	36	-9	27
Total, Food and Consumer Services	18,905	-31	18,874	18,724	-22	18,702
Marketing and Inspection Programs						
Animal and Plant Health Inspection Service	324	-14	310	324	-12	312
Food Safety and Inspection Service	363	-16	347	363	-16	347
Agricultural Marketing Service	146	-5	141	127	-6	121
All Other	61	-3	58	23	-2	21
Total, Marketing and Inspection Programs	894	-38	856	837	-36	801
Economics and Statistics	107	-5	102	107	-4	103
Departmental Management and Administration						
Departmental Offices	101	-4	97	101	-4	97
Other Operating Costs	76	-3	73	74	-3	71
Receipts				-1,294	- -	-1,294
USDA, GRAND TOTAL	75,879	-1,841	74,038	55,049	-855	54,194

SOURCE: U.S. Department of Agriculture, FY87 Budget Summary.

Geoff Becker is an Analyst in Agricultural Policy, Environment and Natural Resources Policy Division, Congressional Research Service.

II. RESOLVED: THAT THE FEDERAL GOVERNMENT SHOULD ADOPT AN EXPORT PROGRAM TO SIGNIFICANTLY EXPAND FOREIGN MARKETS FOR UNITED STATES AGRICULTURAL PRODUCTS.

THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

21

Trade and the U.S. Food and Fiber System

Jimmye S. Hillman
University of Arizona

WHEN INTERNATIONAL TRADE takes place, it benefits the participants on each side of the transaction. Otherwise no trade would occur. In addition to the narrower commercial effects on the individuals, firms, and government agencies involved, some broader economic effects occur as trade develops. These effects are beneficial to an economy at large and can be grouped into two categories—those which stem from specialization in production and those which stem from the exchange of goods.[1]

Trade theory indicates that it is to a country's advantage to specialize in producing the goods for which it has a comparative advantage, i.e., a lower per-unit cost than other countries. If currency exchange rates are approximately in balance, comparative differences in production costs determine which goods are exported from a country and which are imported. Trade can profoundly affect the structure of a country's industry and agriculture. Trade will stimulate investment in industries which produce goods that are comparatively cheap and encourage the expansion of these industries. In addition trade will force industries which produce comparatively higher-cost products to contract. As certain industries expand, they will demand inputs and products from other industries. This demand will lead to investment not only in exports but elsewhere in the economy. The benefits of specialization are not limited to expanding export industries.

Resources and investments will move out of the less efficient, higher-cost industries toward the expanding sectors. This process may be easy and rapid or painful and slow. But as it occurs in a market economy, per-unit costs will tend to rise in expanding industries, as less efficient resources are drawn into them, and to fall in declining industries as least efficient resources are forced out. Ultimately the incentive to further expand domestic production for exports will disappear. In time, a country's resources can be utilized fully and most efficiently if they are allocated among industries in order of their comparative advantage. This involves specialization in particular products.

Turning to the demand side, how do individual consumers benefit from the international specialization based on comparative advantage? A trade theorist might say that "international exchange raises the real income of a trading country." This would not convince a steel worker whose job is threatened by foreign steel imports that trade is beneficial. Given the fact that not every consumer will benefit equally from international trade, what are its specific benefits?

International trade is beneficial when it allows buyers access to goods which otherwise would be either unavailable or more expensive. If international trade were interrupted, a large number of tropical products such as coffee, tea, cocoa, bananas, and spices would disappear from the grocery store shelves in the U.S. Domestic production of such items in greenhouses would be extraordinarily costly.

Relatively lower foreign prices also allow U.S. consumers to buy more goods with their disposable incomes. If consumers can buy imported television sets, textiles, or shoes for significantly lower prices than domestic items of comparable quality, they have in effect raised their incomes. Therefore, lower priced foreign goods offer consumers a genuine economic opportunity to increase their purchasing power. This is true regardless of the reason for the lower foreign prices. Moreover, these price benefits extend beyond consumer goods. They are also embedded in imported industrial products and in the raw materials used to produce final goods domestically at lower prices than would otherwise exist. Foreign goods also may be bought because they are less expensive than similar domestic products. At one time the Volkswagen was regarded as less expensive than comparable U.S. cars, although it probably wasn't a lower cost car than the U.S. models. Also, quality may differ and warrant higher prices for foreign products.

Differences between domestic and international price ratios signal a profitable opportunity to sell domestic goods and buy foreign goods. Specializing according to comparative advantage permits a nation to produce

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Taken from the series, "The Farm and Food System in Transition," a Cooperative Extension Project.

more of a good than its consumers want and then to trade this good for less costly imported goods from all over the world. This provides a better deal for consumers than if everything were produced at home. In no other sector is this illustrated better than agriculture.

Generally trade is better for a nation's economy than no trade, yet trade may not benefit all individuals in a particular economy. The question of the distribution of the gains from trade is a very complex one which can be further pursued in texts on trade theory.

The issue of U.S. agricultural imports is not treated in this article. Suffice to point out that U.S. agricultural imports are the exports of other temperate-zone industrial country producers and of the third world countries in which the U.S. stake—agricultural and nonagricultural—is high. In the current frenzy over agricultural exports, it is often forgotten that for a long period after World War II U.S. imports of foods and agricultural products were of a similar—and often of a greater—magnitude than its exports of foods and agricultural products. It was not until after 1970, when the great surge of U.S. agricultural exports took place, that the agricultural trade balance became so heavily weighted toward U.S. farmers and policymakers.

The Role of Agricultural Exports in U.S. Development

The importance of agricultural exports to the U.S. economy is not new. Since this country was first settled we have supplied raw materials to Europe, and there have been a few notable examples of primary exports leading regional and national economic growth. Some of the commodities which now dominate America's share of world trade were the engines of growth during the last century. Before the Civil War, cotton accounted for over half of the value of all U.S. exports. Thus imports and the formation of capital in this capital-poor country depended upon the income earned by it. Foreign demand determined the expansion of the Southern cotton economy, which, in turn, stimulated the early growth in producing foodstuffs in the West. European capital, seeking profitable investment in Midwestern development, moved in sympathy with the cyclical surges in the price of cotton.

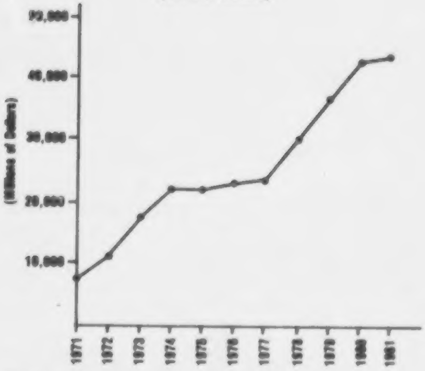
The role of wheat in the opening and development of the Midwest is another classic case of an export leading regional growth. Facing a highly price-elastic demand in Europe (i.e., a situation in which the amount sold responded disproportionately to price changes), Midwestern wheat exports rose fourfold between 1870 and the early 1890's. This dramatic increase brought the share of exports in the regional gross farm output up from about one-seventh to one-fourth. Farmers' real income climbed 135 percent in only twenty years, with the growth of exports accounting for 30 percent of the increase.[2] As it does today, U.S. wheat dominated world grain trade in the last quarter of the nineteenth century. Not only was the U.S. the largest wheat producer, it was also the most efficient producer. Lessons from the wheat boom are instructive for modern farmers and farm economists. This country's competitive advantage seems to have stemmed from its low production costs as well as from the efficiencies of its marketing system—unparalleled economies in long-distance transport, storage, and handling. Such economies still provide the cutting edge for the U.S. share of several commodity markets.

In the last century agriculture provided the livelihoods of far more of America's people than it now does. Decades after Independence we were still for the most part primary producers for the urban, industrial centers of Europe. Obviously there is little resemblance between the cotton economy of the Old South or the wheat economy of the western frontier and the modern U.S. economy. But it is easy to overstress the obvious differences among these economies and thus to miss the continuing similarities in U.S. agriculture. The great wheat boom coincided with the rapid decline in agriculture's share of employment, the first large migration from the farms, and the industrialization which made the U.S. a rival of the most advanced economies on earth. In its reign King Cotton was but a small part of the gross national product, generating only one out of every twenty dollars earned by U.S. citizens. Yet at that time no other activity earned so much foreign exchange and none had so much influence upon the pace of all other activities. The size of agriculture's relative share of total income and employment today *still* belies its enormous importance to the U.S. economy.

The U.S. Share of World Trade Today

In recent times the economies of the world have become very interdependent. During the 1960's and 1970's world trade grew at record rates. Over the past 20 years, the volume of world agricultural exports has increased at a little over 4 percent per year, twice the rate of growth of the volume of world production. The U.S. share of this trade rose from 25 percent in 1970 to 38 percent, or 163 million metric tons, in 1981.[3] So long as a discrepancy exists between the growth of world demand and the growth of world supply, high volume producers will have an oppportunity to increase their share of the markets abroad. The China market is a case in point. Although Mainland China was the world's second largest producer of cotton three years ago, it was also the world's largest importer, with most of this additional cotton coming from the U.S. The U.S. is in a position to supply the growing world demand for agricultural products because, despite the enormous size of the domestic market, U.S. farmers can efficiently

Fig. 1—U.S. Agricultural Exports 1971-81.* (current dollars)



Data for 1981 are preliminary.

Source: U.S. Foreign Agricultural Trade Statistical Report, Calendar Year 1981. *USDA, Economic Research Service, p. 1.*

Export values are current, free-alongside-ship values at U.S port of export.

produce far more than domestic demand. Fig. 1 depicts the rise in exports over the past decade.

U.S. farmers might be riding the tide of increasing demand for agricultural goods for some time to come, but perhaps not to the extent which existed in the decade 1972-81. The need for food and fiber is a function of population and economic growth. If the world's population continues to grow at 1.8 percent per year, there will be 5.2 billion people to feed and clothe in 1990. Industrialization in poor countries raises the standards of living for these countries and consequently raises their imports of consumer goods. The first manufacturing industry of many developing countries is textiles, since it involves much semi-skilled labor and few, if any, economies of scale. One after another, the newly industrializing countries have sharply increased their consumption of cotton, thus fueling rates of economic growth that are the fastest in the world. With rising living standards, diets also change. Thirty years ago, red meat was hardly a part of the Japanese diet. By 1980, red meat accounted for one-fifth of the calories that the Japanese consumed. The taste for meat stimulates the production of both grain and beef, since growing one calorie's worth of beef requires more than one calorie's worth of grain.

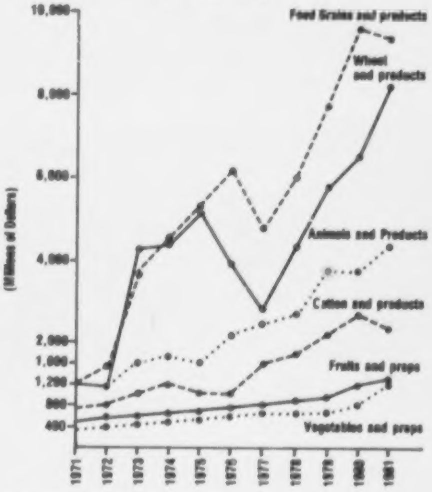
For all these reasons, world agricultural trade has expanded vigorously and since the U.S. is the preeminent exporter in that trade, it stands to gain proportionately.

In 1981 the U.S. Department of Agriculture's (USDA's) International Economics Division projected a 5 to 8 percent annual growth of foreign demand for U.S. farm goods. This would mean that the volume of our agricultural exports would double in the next 9 to 14 years. Prospects now are for somewhat slower growth.

In a world where agricultural trade amounts to 430 million metric tons, the U.S. share of 38 percent represents an immense economic power. We can more easily appreciate this power when we consider the particular commodities that earn the most money for the U.S. In 1980 one of every two bushels of wheat traded in the world was produced in the U.S. Close to two-fifths of the cotton, three-fifths of the coarse grains, and more than four-fifths of the soybeans traded are U.S. grown.[4] The major traded commodities shown in Fig. 2 do not each, individually, constitute a major share of world trade. But in all of them the U.S. is a large net exporter.

A positive (net export) balance for a given good generally indicates that the exporter enjoys a comparative advantage in producing it. The many compara-

Fig. 2—Selected U.S. Agricultural Exports 1971-81.* (current dollars)



Data for 1981 are preliminary.

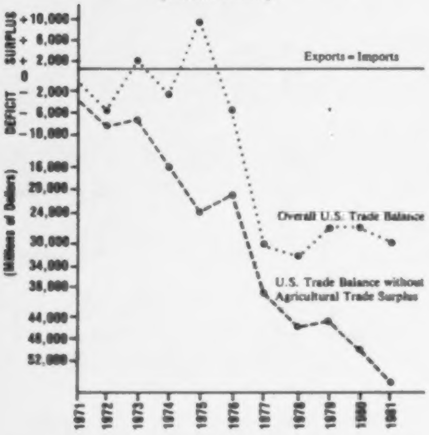
Source: U.S. Foreign Agricultural Trade Statistical Report, Calendar Year 1981. *USDA, Economic Research Service, pp. 2-4.*

Export values are current, free-alongside-ship values at U.S. port of export. "Preps" is an abbreviation for preparations.

tive advantages of U.S. agriculture add up to a $26.5 billion agricultural trade surplus. This surplus is important because in the nonagricultural categories of its merchandise account the U.S. has recently been running a huge deficit. Fig. 3 portrays this deficit and the agricultural surplus in stark contrast. In 1970 U.S. nonagricultural and agricultural balances of trade were roughly equal. Both were surplus by $1.3 billion and $1.5 billion respectively. During the 1970's, foreign competition weakened U.S. trade in textiles, steel, automobiles, and petroleum but the strength in U.S. agricultural trade became more pronounced. The extent to which our farm exports can support a sagging nonagricultural trade is limited because they are still only approximately 20 percent of all U.S. exports.

With some of its largest trading partners, the U.S. has now come to rely upon exports of food and raw materials to pay for net imports of manufactured goods. The commodity group in which we have the largest trade surplus with Japan is food, followed by raw materials (excluding minerals, metals, fuels). Together, our exports of these two groups have increased 110 percent since 1973. While our imports of agricultural products from Japan have not increased at all, other imports have increased. During the same period, Japan has increased its trade surplus in manufactures with the U.S. from $7 billion to $27 billion, and in engineering products from $5 billion to $25 billion. With the industrial countries generally, the U.S. runs a trade deficit in iron and steel, semi-manufacturers, and motor vehicles. In total manufactures over the past three years imports have exceeded exports by an average $20 billion annually. On the other hand, net exports of food in the same period have averaged $13 billion.[5]

Fig. 3—U.S. Agricultural Exports and an Unfavorable Balance of Trade, 1971-81. (current dollars)



Source: U.S. Foreign Agricultural Trade Statistical Report, Calendar Year 1981. *USDA, Economic Research Service, p. 1. Balance of trade figures are for calendar years.*

The Traded Share of U.S. Agricultural Production

One way to gauge the relative importance of international trade to the various sectors in our economy is to follow the ratios of their exports to total sales over time, a measure of the extent to which they participate in such trade. In 1961 manufactured exports were 3½ percent of total sales for that sector. Agricultural exports were 15 percent of farm sales. By 1981 the export share of manufactures had risen to a little over 7½ percent while that of farm goods exceeded 30 percent, having doubled only in the previous ten years.[6] The yield from one out of every three harvested acres in this country is sold abroad.

U.S. farmers need the additional demand that international markets represent. Our agriculture is land-intensive; it is more efficient when high capital costs are spread over more acres. The vast expanses of fertile land in the Midwestern and Western states allow those efficiencies to be achieved. If one-third of acreage were not devoted to exports and farmers were constrained to operate at only two-thirds of capacity, their per-acre costs of production for interest, fertilizer, and other inputs would be higher and their competitiveness with farmers in other countries, and even in U.S. markets, that much less. In 1980, U.S. production of wheat was 300 percent of the wheat consumed domestically. Cotton production was 200 percent of the level consumed at home.[7] Cattlemen do not regularly send such large surpluses abroad, but they too depend upon the foreign consumers. USDA Foreign Agricultural Service figures show that the export share of hides and skins is currently about 50 percent larger than the domestic share. In 1979 it was 133 percent larger. Foreign demand is capitalized into the land and embedded in the large scale of U.S. farm operations.

Some economists predict that the rising world demand for American farm products will be communicated to American farmers and consumers in the form of real price increases of one to three percent per year during the next decade. This would reverse a 30-year trend of steadily declining real farm prices. This historic reversal would help to buoy the falling profit margins which oppress so many American farmers. If agriculture's low rate of productivity growth does not regain the much higher levels of the early 1970's (and the current high rates of interest all but guarantee that it will not), then only raising the terms of trade for farmers by government action or by other means will relieve them from the cost-price squeeze. Thus would the current importance of trade to our farm population be much enhanced in the decade ahead. Needless to say, economists differ in their opinions about this analysis.

The benefits of robust agricultural trade are not limited to the farm sector. Other industries such as transport and processing have forward and backward links to agriculture that render them beneficiaries as well. The Agricultural Council of America, a trade promotion organization, concluded that in 1980 sales among a set of such linked industries were higher by $83 billion on account of agricultural exports. The effect of higher farm profits upon federal fiscal policy is difficult to calculate, but the price supports and loans with which the government compensates farmers in distress have added considerably to an oversize budget deficit.

The influence of world demand upon our agricultural economy is not all salutary. Reliance on exports has its dangers. A country that relies heavily upon international trade is particularly sensitive to changes in the economies of other countries. In the 1970's a favorable conjuncture of various economic forces in the world brought about the U.S. agricultural export boom. Now some of those opportune conditions no longer exist and worldwide stagnation confronts U.S. agriculture with serious, albeit short-term, problems. The problem with Mexico, the third largest importer of our agricultural products, is a good example. On the strength of its expected oil revenues and a growth rate of GDP between 7 and 8 percent, Mexico increased its imports of U.S. farm products by 37 percent in 1981. In 1982, for a variety of reasons which included a worldwide petroleum glut, crisis befell the Mexican economy. Under the stringency of new loan requirements and other measures of austerity, Mexico's prospects for future economic growth will have to be lowered. In 1982, Mexico's GDP growth was probably only 3 percent, and in 1983 it should fall further. U.S. farmers stand to lose from this decline.

In trading individual commodities, relying upon volatile demand abroad results in considerable price instability. Cotton has always been heavily traded around the world. Just before the Depression of the 1930's the U.S. exported close to 11 million bales. When the recession set in, cotton prices fell by one-half. Today this vulnerability remains. The very low cotton prices that prevailed at the end of 1980 were probably largely due to the Chinese cancellation of an order for 150,000 bales. Out of a total world supply of 67 million bales that amount seems trifling, but the price of cotton is acutely sensitive to small market changes. In this instance, general anxiety about remaining commitments simply compounded the price effect of a very *inelastic demand* operating upon *a fixed short run supply.*[9] When demand is inelastic (remains virtually the same), a small change in supply results in great volatility in producer revenues.

This discussion of the situation and prospects of U.S. agricultural exports would not be complete without examining the trends in what products compose trade and where these products go. In general, the U.S. keeps more of its processed agricultural products at home than it trades. This tendency has become more pronounced in recent years, essentially for two reasons. Compared to the rest of the world the U.S. is most efficient in the growing and handling stages of production. When significant amounts of labor are added to our products, our costs tend to rise relatively higher than the costs in many countries. Second, most governments of the world intervene in markets for processed goods in order to capture added value for their own firms. Major importers restrict the amount of goods shipped in and major exporters subsidize the goods they sell. Freer trade in less processed goods leaves our comparative advantage unimpaired.

Table 1 gives trends in the composition of our farm exports and Foreign Agricultural Service projections for these exports. As the table shows, primary products, including grains, cotton, live animals, fresh fruits, and vegetables, predominate among agricultural exports. Increasing at 20 percent per year over the past decade, these exports constitute the fastest growing, as well as the largest, component of the three export groups. Consequently, their share in our trade has grown since 1972 and ought to continue to grow through 1990. The Far East has traditionally taken a larger share of our products than has any other region. This share is about 35 percent now. The European Community's (EC) purchases have declined in the past five years from nearly one-third of our exports in this group to less than one-fourth of them. The reason is that the EC's farm price supports and export subsidies have created vast commodity surpluses in Europe.

Table 1—The Composition of U.S. Agricultural Exports by Value Added.
(Percentage of all agricultural exports)

Export Group	*1972*	*1981*	*1990**
Initial (unprocessed)	62.4	67.9	68.5
Value added	37.6	32.1	31.5
First stage (semi-processed)	27.5	21.7	21.8
Second stage (processed)	10.1	10.4	9.7

*Projected

Source: Foreign Agriculture, *USDA, Foreign Agricultural Service, January 1983, p. 9.*

Semi-processed products constitute two-thirds of our *value added* farm exports. These include cottonseed oil, hides and skins, animal fats, meat, and citrus juices.

Although the EC is still the best regional customer, its share has fallen while the share going to Far Eastern markets has been rising. Japan rivals or surpasses all other countries in its imports of most of America's major initial (unprocessed) and first-stage (semiprocessed) exports. Most of this growth has occurred only in the last decade. Even more recent has been the rapid increase of these exports in the other markets of East and Southeast Asia. Korea, Taiwan, Hong Kong, and Singapore are among the fastest growing markets for our animal products, fruits and vegetables, and cotton.

The singular increase in the purchase of these commodities in Oriental markets testifies to a decisive shift in the locus of U.S. trade. USDA Economic Research Service figures reveal that all U.S. agricultural exports to East Asia have been growing at 27 percent per year since 1976. At this rate their value will double in less than three years. The economic foundations of the growth in the Orient are solid. This is no less true if we disregard the preponderant influence of Japan upon average regional statistics. From 1970 through 1981, the average GNP for the countries in the World Bank's East Asia-Pacific Region (excluding Japan) was about 8 percent higher each year. Through roughly the same period, the EC economies grew at only 2 percent per year. West European growth rates of 1 to 2 percent after recovery from the recession which began in 1981 seem to be a reasonable forecast.

Even more striking are the differences in industrial growth. Of the 13 countries whose manufactured output increased at 10 percent or more per year from 1970 to 1978, none were in Europe but five were in the East Asia-Pacific Region. Here population is growing at 2.4 percent and imports of the eight major nations of the region increased from 1970 to 1978 at an annual average rate of 10.4 percent. Everywhere in Western Europe imports were growing more slowly than the *average* for these Oriental nations. The gains to many western states whose lots are cast in the Pacific will be comprehensive and enduring.[10] For example, in the fall of 1982 Governor Bruce Babbitt of Arizona presided at the signing of an agreement between Taiwan and the U.S. for Taiwan to purchase one-tenth of the Arizona cotton crop. If the Atlantic has been "the commercial sea of the twentieth century," the governor observed, then "surely the Pacific Ocean is the commercial sea of the twenty-first."[11]

Current Issues

The decline of U.S. agricultural exports in the early 1980's has been attributed to a number of factors: a weak world economy, world debt problems, a strong dollar abroad, increased export competition, and an expanded variety of trade restrictions and distortions. This disappointing performance of U.S. agricultural exports has centered discussion on several policy issues. These issues concern the basic question of how farm exports can be stimulated in a world market characterized by the "negative" factors listed above.

Consumers have sometimes argued against increased farm exports on the basis that exports tend to raise domestic food prices. However, stimulative export policies were pursued in the 1970's on grounds that expanded foreign markets for U.S. farm products provide a long-term cure for the ills of farmers and related businesses while offering significant benefits to the U.S. balance of trade. Expanded farm exports also create nonfarm employment opportunities.

Alternative policy courses for the U.S. to stimulate agricultural exports focus upon three areas—free trade policies, market development policies, and trade agreement policies. It should be noted that the U.S. argument for a free trade policy for agricultural exports has met with only limited success because of failure to persuade other countries to eliminate trade barriers and trade-distorting mechanisms such as export subsidies. Free trade has also been hampered by the world economic recession and by the high domestic agricultural price support policy in the U.S. Market development policies such as efforts toward international trade agreements require the utmost of patience and diplomatic skill. Moreover, abrupt decisions such as embargoes or retaliatory programs toward countries where potential markets exist will only result in a continued lack of stability in world markets for U.S. agricultural products.

Prospects for U.S. Agricultural Trade

The 1970's was a decade of extraordinary growth in U.S. agricultural exports. The 1980's began with a slowing of that growth and this decade could even result in a decline in export volume. Drabenstott[12] has outlined a rather gloomy potential immediate future for our agricultural exports.

Increased protectionism, a sluggish world economy, a slow return of developing countries to financial strength, ample world food supplies, and relative strength in the dollar—all of these factors point to slow growth for farm exports for the next few years. Weaker-than-expected farm exports significantly affect U.S. farms. Without strong export markets, it will be difficult for farm income to return to the high levels of the 1970's in the near future. Grain surpluses will almost certainly continue to pose a major farm problem. Land retirement and other programs such as PIK may be necessary. As a result, farmland values are not likely to post the strong gains they showed in the 1970's.

Large supplies of farm products on the domestic market will most likely mean moderate food prices in the continuing battle against inflation. Such supplies will also assist in supporting U.S. policies in the developing Third World through programs like PL480.

The slow world recovery will likely hold back growth in world food demand for the next few years. While the U.S. is expected to lead a world recovery in 1983, economic growth of the industrial countries may average only 1.5 percent. Developing countries, which are a primary market for U.S. farm exports, are expected to lag behind the rest of the world in recovery, hence foreign demand for world traded grain will likely remain weak over the next few years.

Given the magnitude of the debt problem and the prospect of a slow world recovery, some developing countries will need several years to work through their debt rescheduling problems. Unless the current reduction in credit available to LDCs is offset by more credit guarantees from the U.S. and other grain exporting nations, world debt problems will continue to limit food demand.

Demand for U.S. farm products continues to be reduced by the strength of the dollar. The response of U.S. agricultural exports to any weakening in the dollar is uncertain. A weaker dollar would not improve U.S. exports to the EC where fluctuations in exchange rates are countered by variable levy tariffs on such major items as wheat and feed grains. Nor would Latin American countries, which effectively peg their currencies to the dollar, be more likely to increase imports from the U.S. On the whole, dollar depreciation would probably provide a boost to foreign demand for U.S. farm products, even though such depreciation alone is not likely to restore strong farm exports.

U.S. trade policy will significantly affect farm exports during the foreseeable future. If the U.S. opts for a policy of freer trade, it may have to critically examine its farm price supports to determine if current supports allow it to compete effectively in world markets. Such a policy also suggests that expanding farm exports in the short-run will depend on a stronger world economy. The arguments which the U.S. presents before the GATT and the actions which it takes toward subsidies and surplus disposal do not convince other countries that the U.S. has considered all possible consequences of its position on "free trade."

Many view trade agreements as offering potential for short-run improvement in agricultural exports. These measures normally are costly and the long-term market gains produced by them are illusory. For example, a new long-term agreement with the Soviets would be a program with the least budget cost, but the political cost might be high. Finally, if nations engage in confrontations such as direct export subsidy measures to compete against one another, short-run market gains might not hold. Markets would be destabilized. On the other hand, export credit subsidies might result in expanding exports with less danger of encouraging a trade war atmosphere.

Footnotes

[1] The following several paragraphs derive principally from James P. Houck and Peter K. Pollack, "Basic Concepts of Trade," in *Speaking of Trade: Its Effect on Agriculture*, Special Report No. 72, University of Minnesota Agricultural Extension Service, November 1978, pp. 21-35.

[2] Calculated from statistics provided in Jeffrey Williamson, "Greasing the Wheels of Sputtering Export Engines: Midwestern Grains and American Growth," *Exploration in Economic History* 17 (1980):189-217.

[3] Growth rates of world trade and production appear in *International Trade, 1981-1982* (General Agreement on Tariffs and Trade—GATT, 1982), pp. 2-3; also in "The U.S. Share for 1970-80," in the *Twenty-Sixth Annual Report of the President of the United States on Trade Agreements Program, 1981-82* (U.S. Office of the President), p. 17.

[4] *1982 Handbook of Agricultural Charts, Agriculture Handbook No. 609*, USDA, p. 59; *World Food Trade and U.S. Agriculture, 1960-81* (Iowa State University: World Food Institute, 1982), p. 23.

[5] *International Trade, 1981-82* (General Agreement on Tariffs and Trade, 1982), Appendix 19.

[6] *Economic Report of the President and Annual Report of the Council of Economic Advisors* (U.S. Govt. Printing Office, 1983), pp. 218, 269, 273, 280.

[7] *World Food Trade and U.S. Agriculture, 1960-81.* (Iowa State University: World Food Institute), p. 25.

[8] "Farm Exports to Mexico Advance Sharply," *Arizona Farmer-Ranchman*, June 1982; "The IMF and Latin America," *Economist* 11 (December 1982): 69.

[9] W. W. McPherson and Max R. Langham, "Commercial Agriculture in Historical Perspective," *Amer. Jour. Ag. Econ.* 63 (December 1981): 897.

[10] The East Asia-Pacific region includes Fiji, New Guinea, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand, and Taiwan. The last eight have been included in the calculation of average rate of growth of imports, and the weights assigned were equal to each country's share of all regional imports. The raw statistics for this region and for Western European countries appear in *World Development Report, 1980,* (International Bank for Reconstruction and Development), pp. 99, 112-13, 124-25; *World Bank Annual Report, 1981*, (International Bank for Reconstruction and Development), p. 131. The projection of European growth rates appears in "Is There an Export Bull Market Ahead?" *California Farmer*, 4 September 1982, pp. 5, 21.

[11] "Taiwan Signs Intent to Buy 130,000 Bales of Arizona Cotton," *Arizona Farmer-Ranchman*, November 1982, pp. 35-37.

[12] Mark Drabenstott, "The 1980's: A Turning Point for U.S. Agricultural Exports," *Economic Review*, Federal Reserve Bank of Kansas City, (April 1983): 14, 15. His notes are used extensively here.

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Competing in the World Marketplace: The Challenge for American Agriculture

By Mark Drabenstott and Kim Norris

The international dimension is critical to American agriculture's current adjustment. In the 1970s, booming farm exports ushered in farm prosperity. But in the 1980s, slumping U.S. farm exports due to stagnant world food demand and intense export competition contributed significantly to great financial stress for farmers, lenders, and agribusiness. Thus, restoring U.S. prominence in the world food and fiber market will be vital in overcoming many of U.S. agriculture's current problems.

How can American agriculture better compete in today's world food market? To provide some answers to that critical question, the Federal Reserve Bank of Kansas City sponsored a two-day symposium on "Competing in the World Marketplace: The Challenge for American Agriculture." The symposium was held in Kansas City, Missouri, on October 31 and November 1, 1985. The consensus view at the symposium was that changes in agricultural policy and ongoing technological advances will enable U.S. agriculture to become more competitive in world markets. But participants also quickly agreed that the exchange value of the dollar and the health of the world economy would be even more important in affecting U.S. farm exports.

This article summarizes the presentations and discussions at that symposium. The article follows the agenda shown in the accompanying box. The first section considers the imperative of competition, the second examines the role of technology in enhancing competitiveness, while the third explores the role of policy—agricultural, international economic, and national economic—in enhancing competitiveness. The final section considers the challenge in building market demand in less developed countries.

Opening address

Governor John Carlin of Kansas set the stage for the symposium with an address, "Trade and Agriculture: A Governor's Per-

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Competing in the World Marketplace:
The Challenge for American Agriculture
A Symposium Sponsored by the Federal Reserve Bank of Kansas City

Trade and Agriculture: A Governor's Perspective
John Carlin, Governor of Kansas

The Imperative of Successful Competition
Daniel G. Amstutz, Undersecretary of Agriculture for International Affairs and Commodity Programs, U.S. Department of Agriculture
Martin E. Abel, President, Abel, Daft, and Earley, *discussant*

Enhancing Competitiveness: Real Factors
Infrastructure and Agriculture
Ray A. Goldberg, Moffett Professor of Agriculture and Business, Harvard University
James E. Tillotson, Vice President of Technical Research and Development, Ocean Spray Cranberries, Inc., *discussant*

Research and Technology in Agriculture
Michael J. Phillips, Project Director, Food and Renewable Resources Program, Office of Technology Assessment, U.S. Congress
John T. Marvel, General Manager, Science and Technology for Europe/Africa, Monsanto Company, *discussant*

Enhancing Competitiveness: Policy Factors
U.S. Agricultural Policy
Richard E. Lyng, President, Lyng and Lesher
Harold F. Breimyer, Professor Emeritus, University of Missouri-Columbia, *discussant*

International Economic Policy
Graham J.L. Avery, Counsellor, Commission of the European Communities
D. Gale Johnson, Eliakim Hastings Distinguished Professor of Economics, University of Chicago, *discussant*

National Economic Policy
Manuel H. Johnson, Assistant Secretary for Economic Policy, U.S. Department of the Treasury
Robert Z. Lawrence, Senior Fellow, Brookings Institution, *discussant*

The Challenge in Building Market Demand
Dale Hathaway, Vice President, Consultants International Group, Inc.
Orville L. Freeman, Former Secretary of Agriculture, Chairman, International Division, Popham and Haik, *discussant*
Jerry M. Hiegel, Chairman of the Board and Chief Executive Officer, Oscar Mayer Foods Corporation, *discussant*

spective." While emphasizing the importance of international trade for agriculture, Governor Carlin cautioned that the United States cannot carry out protectionist trade policy with impunity.

The governor began by focusing on the internationalization of agriculture, noting that the output of 25 percent of U.S. farm acreage is exported. He then pointed out that, while the U.S. share of the world market has declined from 61 percent in 1981 to 50 percent in 1985, domestic agricultural production has steadily increased. This accounts for much of the agricultural surplus problem now facing the nation.

Governor Carlin stressed the need for a comprehensive trade policy that would include dialogue with the European Community (EC) and cautioned against protectionism. Although a trade policy that enhances the competitiveness of farm exports is necessary, such a policy would not be sufficient to expand trade. Also needed are reductions in the federal budget deficit, an end to the use of agricultural commodities as a foreign policy weapon, greater stability in domestic farm policy, and a concerted effort to promote U.S. agricultural products abroad.

The imperative of successful competition

In a paper entitled "The Imperative of Successful Competition," Undersecretary of Agriculture Daniel Amstutz argued that more market-oriented farm programs and successful negotiation of fair trade practices are essential for the United States to regain competitiveness in world agriculture markets. Amstutz noted that the increasing productivity of U.S. agriculture and a mature domestic market for farm products mean U.S. farmers must depend on exports to maintain their incomes. But other agricultural producing nations also are striving to maintain farm incomes through exports. Consequently, the policies of competing countries are often at odds, with each country trying to capture a larger share of the world market for its own farm commodities.

Amstutz made a careful distinction between "comparative advantage" and "competitiveness." Comparative advantage is the trade patterns that would exist in the absence of market distortions. Competitiveness is the trade patterns that do exist in the presence of government policies. He then noted that the United States has a comparative advantage in agriculture, but may not be competitive in agriculture. He cited the shrinking U.S. share of world grain trade as evidence of declining competitiveness in the 1980s and attributed this decline to several factors.

While noting the adverse effects of a strong dollar and sluggish world economic growth, Amstutz identified inflexible farm programs and unfair competitor trade practices as the primary constraints on competitiveness. He suggested that high U.S. farm support prices act as export taxes, allowing competitors in other countries to undersell the United States. The high support prices in effect establish a global price umbrella for agricultural commodities, signaling the rest of the world to increase production. He also held unfair trade practices, notably by the EC, responsible for a shrinking U.S. share of world food markets. Export subsidies, import tariffs, and non-tariff barriers all hurt U.S. sales.

Amstutz emphasized the need for the United States to reorient its domestic farm programs—by allowing crop support prices to reflect market realities—and to negotiate rules of fair trade with the EC. Through these actions, he said, the United States can use its comparative advantage in agriculture to supply a larger proportion of the world's food needs.

In discussing Amstutz's paper, Martin Abel agreed that the United States must become more competitive in world markets. He suggested, however, that more than market-oriented farm programs and fair trading rules are needed to overcome the underlying problem of surplus U.S. agricultural production capacity.

The fundamental challenge for U.S. agricultural exports, according to Abel, is to stimulate growth in world trade. And the potential for trade growth lies mainly with the developing countries. Two things can be done to speed growth and development in potential markets for U.S. farm exports. One is for the United States to use existing economic assistance and agricultural export programs more effectively. The other is for the United States to keep its markets open to agricultural and nonagricultural imports from developing countries. Although price competitiveness is important, Abel concluded, it is equally important for the United States to use economic assistance programs in stimulating world economic growth and world agricultural trade.

Enhancing competitiveness: real factors

Infrastructure and agriculture

In "Infrastructure and Agriculture," Ray Goldberg examined how U.S. agribusiness has used infrastructure and institutional arrangements to compete in global agribusiness. He began by suggesting that farm price supports under postwar farm programs made possible the application of capital-intensive technology to agriculture, but caused farmers to rely on those government programs rather than markets. The result was surplus agricultural production that led to the development of extensive infrastructure—including a domestic storage program—and a variety of institutional arrangements to make use of agricultural resources.

Goldberg argued that U.S. agribusiness did not have to compete on a global basis until the 1980s. The trade boom of the 1970s enabled the United States to vertically integrate its food and trading system around a global market. But now the United States must compete in a global market that not only has stopped expanding but has gone into decline. Goldberg cited the resulting excess capacity in all aspects of agribusiness—farm inputs, transportation, processing, and distribution. Many producer countries have insulated their agricultural sectors from the global economy, but the United States has not. As a result, agribusiness in the United States is in the midst of a major restructuring.

Goldberg identified some actions agribusiness and policymakers can take to restructure U.S. agribusiness and make it more competitive. Keen market orientation, product and service differentiation, innovative financing, and maintenance of market access will be essential tools for keeping agribusiness competitive. He insisted, moreover, that international trade in agriculture is not conducted solely on the basis of price. Such factors as reciprocal trade agreements and the technology associated with a commodity are also important. These factors, he argued, will lead to new types of firms, institutions, and joint ventures to meet the demands of the marketplace.

Goldberg concluded with several other suggestions for making U.S. agribusiness more competitive in world markets. He cited the need for renewed efforts to capture the growth markets of Southeast Asia, Latin America, Africa, and the Middle East. He said a restructuring of U.S. agribusiness is also required, both internally and externally. He predicted that business alliances to meet demand for differentiated products, such as the alliance between Continental Grain and A.E. Staley, will become more common. In the same vein, he encouraged U.S. food processors to make further investments in technology to maintain competitiveness. He said U.S. agribusiness can no longer afford to neglect its value-added potential.

In discussing Goldberg's paper, James Tillotson argued that much can be accomplished through American ingenuity and technology. Like Goldberg, he encouraged both the public and private sectors to adopt a systems approach to making U.S. agribusiness more competitive, noting that in international trade we market not just a commodity, but a whole network of infrastructure and technology associated with the commodity. Tillotson also called for a more creative pooling of resources among agribusiness companies and a more market-oriented mentality. He concluded with a reminder that U.S. agriculture was built on superior research and technology and appealed for increased investment in agricultural technology.

Keen market orientation, product and service differentiation, innovative financing, and maintenance of market access will be essential tools for keeping agribusiness competitive. —*Goldberg*

Research and technology in agriculture

In his paper, "Research and Technology in Agriculture," Michael Phillips focused on biotechnology advances and their implications for U.S. agriculture. He argued that technology has made U.S. agriculture one of the most productive and competitive industries in the world. He noted three main eras in technological development: the mechanical era of 1920-50, the chemical era of 1950-80, and the biotechnology and information era that is just beginning. The implications of this new era could be more profound than either of the previous two.

Phillips defined biotechnology as any technique that uses living organisms to make or modify products, to improve plants or animals, or to develop microorganisms for specific uses. The promising areas of biotechnology for agriculture fall into two broad categories: animals and plants. In animal agriculture, the potential applications of biotechnology include genetically engineered pharmaceuticals, gene insertion, and embryo transfer. These techniques should substantially increase productivity. In plant agriculture, the application of biotechnologies could modify crops to generate more nutritious protein, resist insects and disease, grow in harsh environments, and provide their own nitrogen fertilizer. The immediate impacts of biotechnology will be greater for animal agriculture, he said, but the long-term impacts may be most significant for plant agriculture.

Both public and private funding are important to biotechnology research. Federally funded research has been essential to the development of biotechnology in the United States, giving this country a strong and diversified basic research capability in biotechnology. In the private sector, two distinct sets of firms are pursuing commercial applications of biotechnology. New biotechnology firms have been started as entrepreneurial ventures specifically to make commercial use of innovations in biotechnology. Established companies, on the other hand, intend to apply in-house biotechnology research and development to existing or new products and processes. While expenditures on biotechnology research by the private sector are difficult to estimate, Phillips said they are probably two to three times what the government has spent.

Phillips outlined three factors that are essential to the further commercial development of biotechnology. The first key factor for conducting research is financing and tax incentives for firms. Some 100 biotechnology firms have been started by private venture capital since 1976. He argued that the United States has the most favorable tax environment for capital formation and small-firm financing of the major competitor countries. Government funding of research is a second factor. Of concern in this area is the widening gap between basic research funded by the government and the short-term, product-specific applied research funded by private industry. Phillips warned that the relatively low level of government funding for applied research in biotechnology could create a bottleneck in the commercial application of biotechnology. The third critical factor is the availability of adequately trained scientific and technical personnel. The United States needs to maintain its generally high level of training programs for basic scientists.

Phillips predicted that Japan will be the most serious U.S. competitor in biotechnology. Japan has a strong technology base on which to build, and the Japanese government has specified the development of biotechnology as a national priority. He did not expect European countries to be as competitive in biotechnology as the United States and Japan.

Technology has made U.S. agriculture one of the most productive and competitive industries in the world. —*Phillips*

In discussing Phillips' paper, John Marvel agreed that biotechnology will have a great influence on U.S. competitiveness in agriculture. He went on to suggest that the potential impact of biotechnology on agriculture may be greatly underestimated. The impact of biotechnology on human health care could be dramatic, leading to significantly longer lives. Such a result would have an enormous effect on world population and, therefore, on world food demand.

Like Phillips, Marvel expected international competition in biotechnology research to become intense. But he regarded Europe as more of a potential competitor than Japan. He noted that western Europe offers an excellent tax and business environment for investment in biotechnology. Moreover, a disproportionate share of the world's major "life science" companies is based in Europe. These companies, he said, will likely make every effort to maintain their positions.

While Marvel agreed that finance and tax incentives, government funding, and trained personnel are important factors in maintaining a competitive edge in biotechnology, he said the private sector would consider patent protection, property rights, and regulation equally critical. He argued that property rights, the regulatory process, and the relationship between industry and academia could be decisive factors in international competitiveness.

Enhancing competitiveness: policy factors

U.S. agricultural policy

Richard Lyng, in his paper, "U.S. Agricultural Policy," argued that U.S. farm policy has grown more important to U.S. food trade in the 1980s. An American belief in the 1970s that expanding exports were "our birthright" led to farm programs that damaged exports in the 1980s. Specifically, Lyng pointed to the steady climb in crop loan rates as encouraging foreign crop production that eventually began to displace U.S. exports. Moreover, the loan support prices under the 1981 farm bill became so high relative to world market prices that the United States was priced out of the export market and forced into becoming the residual supplier.

While recognizing the critical role of the exchange value of the dollar, Lyng claimed that lower crop loan rates are necessary to enhance competitiveness. He predicted the most historic feature of the 1985 farm bill would be a lowering of crop loan rates. But the dilemma created by lower support prices is that target prices likely will be kept high to protect farmers' incomes. Farm programs, therefore, become even more expensive. Lyng predicted that the annual cost of commodity programs in the next few years could exceed the more than $30 billion spent in 1983, when the PIK program was in place.

Lower crop loan rates are necessary to enhance competitiveness. —*Lyng*

Lyng further argued that the United States almost certainly will continue to have huge commodity surpluses, as the high target prices will encourage production. The surpluses likely will result in ongoing and substantial acreage reduction programs. Lyng opposed such programs, claiming they reduce the cost efficiency of U.S. farms by raising unit costs, thereby lowering competitiveness.

Lyng cited two other aspects of agricultural policy that deserve more attention to enhance the competitiveness of U.S. farm exports. The first is the reliability of the United States as a supplier of food in world markets. He argued that doubts about the U.S. reliability still linger among foreign buyers. The second is the importance of farm product quality. Lyng suggested that producers in the United States must sharpen their understanding of quality and move rapidly to keep up with the quality of competitors.

In discussing Lyng's paper, Harold Breimyer agreed that crop loan prices should be lowered, but asserted that an overvalued dollar and 1983's massive acreage reduction program—the PIK program—were the chief culprits in curtailing U.S. farm exports. Breimyer raised questions about how much is really known about the world food market. He noted that little is known about the price responsiveness of foreign buyers and sellers of food. He also suggested that many diverse factors enter into trade decisions, including political considerations. Breimyer concluded that competitive export pricing may be at odds with our system of crop price supports that attempts to raise farmers' incomes. He suggested a possible two-tier price scheme to disengage these two conflicting objectives.

International economic policy

In his paper, "International Economic Policy," Graham Avery of the European Commission contended that the EC and the United States should seek greater cooperation on their many mutual objectives in agriculture. Those common goals include controlling production, limiting farm program costs, relaxing protection measures, making support price policies more market oriented, and integrating agriculture into the general economy.

Avery suggested that one bond will be especially strong in forging greater EC-U.S. cooperation. That bond is the need to create a better economic order by stimulating economic growth in the developing world. Both the EC and the United States have benefited from rapid growth in agricultural productivity. As a result, both must depend on export markets to alleviate surpluses. But food demand in developing countries has been anemic, not from a lack of mouths hungry for food but from desperate problems of indebtedness on the external account and an inability to pay.

Avery called for agriculture to be included in the next round of GATT trade talks. He then outlined some basic positions that the EC would bring to those talks. First, the EC will maintain its position on world markets for import and export of agricultural products. Second, the EC will retain a system of variable levies on imports and variable refunds on exports to stabilize its internal agricultural markets.

But Avery also suggested that the EC's role in world trade in agricultural products could lead to some reform in the Common Agricultural Policy (CAP). He noted two possible steps in particular. First, export subsidies may be capped, with any additional costs to dispose of surpluses being borne by producers through a "co-responsibility levy." Second, in the longer term, support prices in the EC "could be fixed at levels closer to those of other exporting countries." Thus, he raised the prospect of the CAP becoming more market oriented but implicitly suggested the evolution will be slow.

Avery criticized the Bonus Incentive Export Enhancement Program (BICEP), a recent U.S. export promotion program. Calling it "a classic export subsidy program," Avery claimed the program had lowered world prices. He posed two questions, "Who benefits from this kind of measure? And who pays?"

Avery concluded that the prospect of a new multilateral round of trade negotiations—the proposed GATT talks—must raise hope that trade tensions will diminish between the EC and United States. He further suggested that talks on monetary stability should proceed in tandem with trade talks. And, he said that Japan must be a solid partner in supporting an open multilateral trading system.

In a spirited but friendly discussion, D. Gale Johnson challenged many of Avery's points. Responding to Avery's criticism of the three-year $2 billion BICEP program, Johnson noted that EC export subsidies were more than $5 billion in 1984 alone. Johnson also questioned Avery's criticism of U.S. powdered milk subsidies in 1982, noting that the EC has used subsidies to become the world's largest dairy exporter.

Johnson was disturbed by EC positions regarding the GATT round of talks. As a reason for retaining variable levies and export subsidies, Avery had said the EC "paid with concessions in earlier negotiations for the right to apply these mechanisms." Johnson asked what was paid. He said the EC had simply lowered import tariffs on what were then considered insignificant feed products, soybean meal, for example. As the products subsequently became more important, Johnson said that the EC had attempted to "weasel" out of the commitments. Even if the EC has paid a lot, Johnson wondered if that is a good argument for keeping a system that may be counterproductive to global interest.

Johnson took heart from the suggestion that in the longer term EC support prices will more closely reflect those of other exporters. But Johnson expected little if any progress, due to Avery's qualifier that the lowering "would be logical, especially for those products where the EC accounts for a significant part of world production."

The EC will retain a system of variable levies on imports and variable refunds on exports to stabilize its internal agricultural markets. —*Avery*

He concluded with some incisive general comments. He asserted that excess productive capacity in world agriculture will "haunt us for most of the rest of this century." Both the EC and the United States, with farm policies that encourage production, must accept responsibility for this predicament. Suggesting that the decline in the rate of growth in international trade may not have ended, Johnson concluded that the United States and the EC can produce far more farm products than the markets will absorb at a reasonable return.

He suggested that U.S. agriculture may face a long period of difficult adjustment. Resources need to leave agriculture, he said. Questioning the willingness of either EC or U.S. policymakers to face up to this grim reality, he ended by saying, "I am quite pessimistic about the prospects for any real change before the end of this decade."

National economic policy

Manuel Johnson, in "National Economic Policy," presented a Reagan administration view of economic policy and its effects on agriculture. Briefly stated, that view is that America's new economic policy direction has been largely successful, having controlled inflation, stimulated investment, and unleashed individual initiative. Johnson viewed the problems of agriculture as largely transitional, brought on by the puncturing of the highly inflationary expectations of the late 1970s.

The most prominent policy decision that has led to economic successes, according to Johnson, was the reductions in tax rates in 1981. These cuts stimulated capital investment by increasing after-tax real rates of return on capital. The administration believes that maximum reliance should be placed on a productive private sector that is responsive to market signals. He said that, in the long run, the resulting market forces will bring real benefits to the entire economy, including agriculture.

Such developments as high real interest rates, large trade deficits, and large capital inflows into the United States are not really problems for the whole economy, he said. Rather, they indicate that supply-side incentives are succeeding. Johnson rejected the traditional view—that budget deficits raise real interest rates and attract a large inflow of foreign capital—as defective and lacking any demonstrable linkage. Johnson asserted that there are no simple answers about the effects of federal budget deficits.

A more obvious link, according to Johnson, is that Reagan administration policies have improved the investment climate by raising rates of return on capital. Thus, tax reduction combined with greater freedom of financial markets in this country has resulted in a voluntary inflow of capital from abroad. This borrowing from abroad ought not be viewed as adverse to long-run U.S. economic interest because the capital inflows are building a productive capital stock that will service the debt in the future.

Johnson concluded that no changes are needed in economic policy, either for the economy or for agriculture. Rather, he said the country needs to continue along present policy lines by raising investment incentives in an even more favorable tax system, reducing the rate of growth of federal spending, and enlarging the scope for the operation of free markets. He suggested that agriculture will have to adjust to a period of relative price stability—an adjustment that will likely last several years. Agriculture will prosper through more market orientation in a steadily expanding U.S. economy and open, growing international markets.

Robert Lawrence sharply dissented from the supply-side views put forward by Johnson. Conceding that the Reagan program achieved some important economic gains in its first few years, Lawrence suggested that a "buy-now, pay-later" fiscal policy should not be judged entirely on its recent effects. He called the current stance of macroeconomic policy "dangerously imbalanced" and said it was leading to great near-term pressures on agriculture and other traded-goods sectors. Of even greater concern, he said, was that current trade imbalances could not be sustained, and they will eventually result in a lower standard of living for the United States.

The point of sharpest difference with Johnson was on the effect of foreign capital inflows. Lawrence conceded that if foreign capital inflows fund real capital formation, the stronger exchange rate they create is a short-run problem of no lasting consequence. But he argued that the foreign capital inflow has been absorbed primarily by increased government spending—largely for defense—and increased consumption. Neither greater government spending nor increased consumption will aid in the future servicing of the debts.

Lawrence also took a different view of how capital investment has responded recently to the tax cuts. He cited statistics indicating that nominal and real investment, after depreciation, is no greater as a share of GNP in the early 1980s than in the late 1970s. Moreover, little of the recent investment has been used to enlarge the U.S. industrial base. Instead, he said, it has gone into such areas as office equipment that will not service our international debt sufficiently.

Lawrence concluded that in the long run the United States will not have invested or saved enough to service its growing indebtedness. Americans, therefore, will have to tighten their belts by paying higher taxes and by paying higher prices for imports. He called for a program to increase government revenues and cut expenditures while strength remains in the economy. Such a program would provide immediate relief to agriculture and other traded-goods sectors while, over the long run, allowing the United States to return to a sustainable external balance.

The challenge in building market demand

Dale Hathaway, in "The Challenge in Building Market Demand," considered a lack of growth in world grain markets the central problem for U.S. agriculture. Countering those who attribute farm problems to domestic farm programs or unfair competition abroad, Hathaway stated that the primary problem is the health of U.S. export markets. Unless growth is stimulated there, he said, pursuing other issues will be fruitless.

Reviewing trends in world grain markets, Hathaway concluded that the growth in the world market for grains has been concentrated increasingly in developing countries. Both the China market and the EC market have been lost to internal production, and centrally planned economies—once thought to be a great growth market for the United States—have not contributed to market growth since 1975. The internal market growth of our traditional competitors (Canada, Australia, and Argentina) also is down, pushing more of their increasing production into export markets.

The slowdown in economic growth in developing countries over the past five years, then, is the basic reason for the sharp decline in world grain trade and U.S. farm exports. Hathaway further suggested that the problem is far more difficult to fix than to understand. One response the United States could make would be to offer export credit to the financially stressed importers. But additional credit does not solve a country's internal income problems or increase real demand.

He concluded, therefore, that the only real solution to the current stagnation in world grain markets is to stimulate income growth in the developing countries. He suggested five steps the United States could take to improve income and food demand in developing countries: to restructure or write down the external debts of the countries, to reduce the exchange value of the dollar, to reduce U.S. interest rates, to maintain open markets for the exports of the debt-burdened countries, and to establish incentives for new capital to flow to those countries. He admitted that a solution drawn from these steps might be difficult in execution and slow in producing results, but he saw no quick-fix alternatives.

Discussing Hathaway's paper, Orville Freeman argued that food aid development programs of the past offer a prescription for agriculture's current problems. He pointed to the successes of the P.L. 480 (Food for Peace) program as evidence that a solution to low farm prices and surplus in the United States and starving people abroad can be found simultaneously. Specifically, P.L. 480 was designed to get food to starving people, to stimulate third world economic development through improved agricultural productivity, and to develop U.S. export markets on the premise that growth in income and food demand will outstrip growth in domestic food production. Freeman asserted that this strategy has been successful before and it should be followed again.

Also discussing Hathaway's paper, Jerry Hiegel agreed that inadequate market growth is the main problem for U.S. agriculture to solve. Many of agriculture's current difficulties can be traced to unusual events in the 1970s, including oil price shocks, that disrupted normal markets. Hiegel argued that the development of international markets must begin with the development of sound producing economies. Moreover, a more complex and extensive infrastructure is needed to support the demand for more livestock products as incomes improve in developing countries.

Summary

Symposium participants agreed that the ability of American agriculture to compete in the world food market will be important in determining whether the industry can overcome many of its current financial problems. Most agreed that agriculture's competitiveness has been impaired over the last five years by a much stronger dollar, farm programs that put support prices too high, and economic distress in developing country trading partners. Disagreement arose over which of these factors has most impaired competitiveness.

Participants generally agreed that American agriculture could become more competitive, but only if a number of important public and private steps are taken. Public policymakers must pursue balanced economic policy that encourages economic growth abroad and keeps the dollar from becoming excessively strong. Farm policymakers must pursue farm programs that are flexible and recognize world market forces. And America must maintain its edge in biotechnology through ongoing public and private support for research and development. The consensus view was that even if all these steps were taken, U.S. agricultural exports may grow only slowly for the foreseeable future.

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INTERNATIONAL DIMENSIONS OF AGRICULTURAL POLICY

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The goal of increasing agricultural exports has many champions. They have advocated various actions. Reduction in the loan rate to reduce U.S. export prices, export credit programs, and export PIK programs are examples. The rhetoric calls for unleashing the potential of the world's most efficient food and fiber producers through adoption of a free market (free of government intervention and support).

Three Misconceptions

Many of the solutions advocated and agricultural policies that would be needed for support are appealing. Unfortunately, many of the proposals are based implicitly on one or more of three of the following misconceptions:

1. That world market and U.S. prices measure opportunity cost and comparative advantage of food and fiber production and consumption in other countries.
2. That the dollar is overvalued and that agriculture will receive an impressive boost when it devalues.
3. That American farmers are the most efficient food and fiber producers in the world.

Opportunity Costs and Comparative Advantage

A basic economic concept is that of opportunity cost. Opportunity cost for a producer is the income and production foregone by current production activities. For farmers, it is measured by the returns to the crop or livestock that could have been produced in place of that which was produced. The opportunity cost of corn production might be the profit that would have been realized from soybean production. Producers tend to allocate their resources (land, for example) across possible commodities such that opportunity costs are equal. In a market economy like the United States, that opportunity cost is determined by the price (or more precisely, the marginal value product) of products that could have been produced.

Opportunity cost has broader applications. The opportunity cost of farming versus doing something else is determined by interest and wage rates. The interest rate is the opportunity cost of capital used in agriculture since it is the return that could have been realized by investing the capital outside agriculture. The wage rate is a measure of the opportunity cost of farm operator and family labor. It is the return that could have been realized by working off the farm. In the United States, opportunity costs are largely determined by market forces unless government programs intervene.

The concept is similar for consumers. The opportunity cost of consumption of a given good or service is the satisfaction that could have been gained from consuming the next best product or engaging in the next best activity. Just as producer actions tend to equalize opportunity costs, consumers divide their income among several products such that opportunity costs are equal. The interest rate and the rate of inflation measure the opportunity cost of current consumption versus saving for future consumption.

When opportunity costs (prices in the United States) change, the mix of consumption and production changes in response. Opportunity costs of food and fiber production have been changing and so the mix of production and consumption has been changing. High interest rates and low commodity prices have contributed to a reduced flow of capital into agriculture. They have changed the opportunity costs of that kind of production which does not require a lot of capital relative to that which does. The fall of agricultural prices makes nonagricultural employment more attractive to farmers. As long as the opportunity cost of farming remains high, more people and capital will leave agriculture. Land values will fall until the opportunity cost of agricultural production equals the return on agricultural labor and capital.

International trade, if freely entered into, takes place on the basis of comparative advantage, a concept closely related to opportunity cost. Comparative advantage suggests that nations will produce and export those goods that cost least to produce in terms of other goods not produced. How many computers must be given up to produce an additional ton of wheat? If that number is large relative to other countries, computers will be exported and wheat imported. Or at least, computer production and exports will expand and wheat production and exports will not.

In this context, comparing agricultural production costs in the United States directly with those in other countries is a meaningless exercise. Whether an Australian or Canadian farmer, who receives the same price and faces the same costs as a U.S. farmer, continues to produce wheat depends on his opportunity costs, the alternative returns for his time and capital, and not on production costs in the United States.

In a world in which monetary exchange conditions are neutral and in which products and inputs are traded freely, opportunity costs would tend toward equalization across countries and products. The world, however, is not one of free movement of goods and people and thus opportunity costs vary. Thus it is a mistake to advocate solutions and to adopt policies as though the returns to agricultural production and its opportunity costs in other nations are determined exclusively by market prices.

Opportunity Costs in Other Nations

The level of agricultural production and consumption is almost globally influenced by government policies. Changes in agricultural production and consumption are likely to originate from changes in government policies. The effect of a U.S. policy (lowering the loan rate, for example) to expand U.S. agricultural exports will largely depend on the changes in the policies of other nations induced by the U.S. policy.

Opportunity costs determine individual decisions. They determine government decisions as well. Some of the opportunity costs are the same for governments as for individuals; some are different. Interest rates partially determine the opportunity cost of government expenditures. If interest rates are low, fiscal deficits may be easier to finance. For many nations, interest rates also determine debt service payments and fix the opportunity cost of eschewing international trade and adopting policies that favor production for domestic consumption rather than for export. Political stability and power also determine government policies.

In the developed countries, most notably the European Community and Japan, government policies provide considerable support for agricultural production. Thus, returns to agricultural capital and labor are held above the returns that capital and labor could earn in other sectors. Holding returns to agricultural production above opportunity costs can be expensive. Both the EC and Japan have had to subsidize internal consumption and exports to reduce domestic surpluses of some products. In all developed nations that can afford to hold agricultural returns above opportunity cost, high producer prices (relative to import prices) are isolated from external factors.

The opportunity costs of government policies in a number of developing nations, and so their agricultural policies, have changed dramatically. The forces of change include a large external debt and a large debt service requirement, both denominated in U.S. dollars or some other "hard" currency. These nations have turned to agriculture, as both an export source and an import substitute. The aim is to generate (or save) foreign exchange so as to be able to meet debt service and to import capital goods needed for economic growth. The opportunity cost of agricultural production and consumption is foreign exchange earnings foregone in other activities. These nations have little ability to generate foreign exchange from consumer or capital good exports. Their export price of agricultural products has little to do with the decision to export. It does not measure their opportunity cost.

The expansion of Argentine agricultural exports and the emergence of the Peoples Republic of China (PRC) as an agricultural exporter are but two of many examples of nations responding to their opportunity costs. Argentina has expanded agricultural exports as the need to service her large external debt has become the government's preoccupation. Argentina has discounted prices to overcome the export credit programs of developed countries. Recently, a large U.S. grain merchandiser attempted to import Argentine wheat into the United States at a price much less than the price prevailing here.

The PRC has no large external debt to service, but it needs massive amounts of imported capital to modernize its economy. To get it, it must generate foreign exchange. The recent change in agricultural price and structure policy changed the opportunity cost of agricultural production. The resulting increase in production has enabled the PRC to become, at least temporarily, an exporter of corn, soybeans, and cotton to other Asian countries. That outcome contrasts sharply with the widely held view of the late 1970s of the PRC as a major growth market for U.S. exports.

What is the appropriate U.S. agricultural policy when agricultural production and consumption in much of the rest of the world are determined by government policies? Is it better to increase U.S. agricultural exports at the expense of countries like Argentina and, perhaps, to cause their default on external debt?

The Overvalued Dollar

The value of the dollar has increased dramatically in the past few years. That increase is alleged to have caused a reduction in U.S. exports and contributed to the current difficulties in the agricultural sector. The dollar is said to be "overvalued;" and when it devalues once more, agricultural exports are expected to increase.

The exchange rate of the dollar for other currencies is determined by its supply and demand in international money markets. Just as any freely-determined equilibrium price, it changes with movements in supply and demand.

The process of exchange rate determination has changed. Exchange rate adjustment was once seen as the mechanism to correct a balance of trade deficit or surplus. If a nation imported more than it exported (a balance of trade deficit); its currency would devalue. The price of imports would increase while that of exports would decline. Thus, imports would tend to fall and exports would tend to grow; both outcomes would tend to reduce the trade deficit.

Today, capital flows are so great that exchange rates are determined as much by them as by merchandise trade. The current high value of the dollar is caused to a very considerable degree by the capital inflow needed to finance the fiscal deficit and by capital seeking a "safe haven." And so, the dollar remains strong even though U.S. imports exceed exports. The equilibrium exchange rate reflects capital flows and it influences exports But, as a freely-determined price, it cannot be said to be overvalued in a contemporary sense.

Not only is the description of the dollar as overvalued incorrect, but most measures used to describe its strengthening grossly overstate that movement. An exchange rate change may reflect differing rates of inflation in two nations. For example, inflation has been much higher in Australia and Canada than in the United States. The Australian and Canadian dollars must devalue relative to the U.S. dollar simply to maintain their relative competitive position. The adjustment of the nominal exchange rates to reflect differing rates of inflation yields real exchange rates which measure changes in relative competitiveness in international markets. The nominal value of the U.S. dollar has increased by as much as 40 percent against competing exporters. The real value has increased from 8 to 12 percent depending on the country. It is the real value appreciation, not the nominal value appreciations, that affects the competitive position of U.S. exports relative to our competitors.

To be sure, the appreciation of real exchange rates has disadvantaged U.S. agricultural exports. When U.S. monetary and fiscal policies change, the dollar will weaken and U.S. agricultural exports will increase. That increase will be much smaller than many proclaim.

Efficient Food and Fiber Production

The term economic efficiency, although widely used, has many meanings. To many economists, it is the combining of resources to produce the highest level of social welfare. It takes into account such non-market effects as water and air pollution, and soil erosion. To others, it is measured in yield per acre or pounds of gain per day on a steer or hog. The ability of one farmer to feed himself and many others (domestic and foreign) is also offered as proof of the efficiency of American agriculture. When a nation engages in international trade these measures have little or no meaning; they do not indicate the ability to compete in international markets.

U.S. sugar production offers a vivid example of an industry that many would consider very efficient, but which is simply not competitive in world markets. It is considered efficient because the most modern machinery is used; high technology pesticides, herbicides, and fertilizers maximize yields. It is not competitive in world markets because the labor and resources in developing nations have few alternatives and thus low opportunity costs.

The rush to embrace the export market as the solution for lagging farm incomes ignores some of the basic theorems of international trade theory. One of these theorems is known as "factor price equalization." That simply means that with free trade, the prices of inputs tend to become equal. The implication for agriculture, under those circumstances, is that factor returns can be higher only if factor productivity is higher. Any nation that accepts free trade must accept this theorem. One implication, incidentally is the importance of research for production efficiency.

Policy in a Global Perspective

When American agriculture prospered during the 1970s, so did the agricultures of our major competitors. The rise in farm incomes in those nations fueled increases in land values and capital investment. The prosperity extended into the European Community despite the isolation of its internal markets from world markets. The agricultural prosperity was global; it was not limited to the United States.

The current stagnation is also global; it is not limited to the United States. Land values have fallen in all agricultural exporting nations including the EC. The fall in land values and the over capitalization of the 1970s have led to bankruptcies and disruptions of those agricultural sectors.

The problems are global. The policy question is the equitable sharing of the agony. There is no quick and easy fix.

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COMMENT BY EDITOR

This edition of E&MI is not easy reading but it deserves the second or third reading it may need. What Professor Bredahl has told us should help us better evaluate what we read in the newspapers and in magazines.

This article does not lay out for us the alternatives the agricultural industry faces. Perhaps it implies they are limited. We need the federal deficit brought under control. Agriculture within itself cannot do that. We almost surely do not need more protectionism forced upon us, but there will be such pressures both from within agriculture and from beyond, both domestic and foreign.

We almost certainly need to strive to increase the productive capacity of American agriculture so that we can enjoy a comparative advantage.

And last, we may need to recognize that there are kinds of production in which we cannot gain or regain comparative advantage. For these areas we may need to explore how we can assist the humane transfer of resources, human or otherwise, to production processes in which we can have a comparative advantage. This is a challenge we are facing -- whether or not we are willing to talk about it.

Robert J. Bevins

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Remember the BREIMYER SEMINAR will be in Columbia on 14-15 November. The program is out. If you haven's received a copy please ask for one. Write Robert J. Bevins, Ag. Econ., UMC, Columbia, MO 65211 (Phone: 314-882-2667)

Agricultural Export Promotion, by Susan Epstein. Washington, Congressional Research Service, 1986. 8 p. (Issue brief ib86023)

ISSUE DEFINITION

As U.S. agricultural exports continue to decline and as surpluses are increasingly burdensome for the Federal budget, more attention is being focused on export promotion programs for U.S. agricultural commodities. Expanded world agricultural production and export competitiveness, coupled with sluggish world demand for agricultural products, have played a significant role in the declining U.S. agricultural exports. Domestic price support programs and a strong dollar have contributed to the lack of price competitiveness of U.S. farm products, resulting in a buildup of carryover stocks. Lawmakers are placed in the position of trying to expand U.S. agricultural exports on the one hand and reduce Federal spending on the other. This issue brief reviews the trade title of the 1985 farm bill (P.L. 99-198) and describes several ongoing agricultural export issues such as export credit, export PIK, and foreign food aid.

BACKGROUND AND POLICY ANALYSIS

Agricultural exports in the 1980s have declined dramatically from the high levels attained in the 1970s. As Table 1 indicates, FY81, when the U.S. exported $43.78 billion worth of agricultural products, was the peak year for U.S. agricultural exports. Over the next 2 years, the value of exports declined to $39.10 and $34.77 billion. FY84 provided some basis for optimism as the value of exports increased to $38.01 billion, contributing to a net agricultural trade balance (exports minus imports) for that year of $19.10 billion. However, the trend continues downward as the final trade figures for FY85 show more severe reductions in exports to $31.2 billion, further narrowing the agricultural trade surplus to $11.4 billion. The U.S. Department of Agriculture (USDA) forecast for FY86 shows further declines in U.S.agricultural exports, to $29 billion, with slight increases in imports, implying an even narrower agricultural trade surplus in FY86.

As Table 1 indicates, while agricultural exports have declined in the 1980s, agricultural imports have increased, with a significant portion of the increased imports in value-added products and in agricultural products that compete with American-produced commodities. The lowest level of agricultural imports (and thus the least amount of foreign competition in the domestic market) occurred in FY82; the highest level of import competition occurred in FY85. With imports increasing and exports declining, the trade surplus (which historically has been one bright area of U.S.trade, contributing between $10 and $20 billion annually since 1974 to American purchases of capital imports) is becoming less effective in buffering the overall U.S. trade deficit.

TABLE 1. U.S. Agricultural Trade Balance, Fiscal Years 1980-1986
--------Billion dollars------------

Item	FY80	FY81	FY82	FY83	FY84	FY85	Forecast FY86
Exports	40.48	43.78	39.10	34.77	38.03	31.20	29.00
Imports	17.27	17.22	15.48	16.37	18.90	19.80	20.00
Trade balance	23.21	26.56	23.62	18.40	19.13	11.40	9.00

	Million tons						
Export volume	163.9	162.3	157.9	144.8	143.6	125.8	120.5

Source: U.S. Department of Agriculture (as of Dec. 3, 1985).

A number of factors are contributing to the decline in agricultural exports. For the most part, these factors revolve around increased competition in the international market -- abundant food supply and relatively weak demand, leading to keen price competition among exporters trying to increase market shares or capture new foreign commercial markets. Good harvests in a number of agricultural exporting countries as well as in countries which traditionally are net importers of agricultural commodities (such as the People's Republic of China and India) have expanded world food supplies considerably. Increasing world supply of agricultural commodities creates downward pressure on commodity prices. Lower world market prices tend to make U.S. loan rates within domestic commodity programs more appealing and the Commodity Credit Corporation (CCC) often becomes the highest bidder for U.S. farm commodities, resulting in expanded CCC inventories. (For further information see Committee Print of the House Agriculture Committee, Subcommittee on Department Operations, Research, and Foreign Agriculture, entitled U.S. Commodity Price Supports and Competitiveness of Agricultural Exports.)

World market demand for agricultural commodities has weakened in recent years, largely because of the world debt crisis which has decreased the purchasing power of many agricultural importing nations, particularly developing countries. Furthermore, the ability of food importing nations, such as China and India, to improve their agricultural productivity has also reduced world market demand for agricultural products.

In addition to a general decrease in demand for agricultural products, foreign demand for U.S. agricultural products has declined in recent years as the American dollar has maintained a high value relative to major trading partners' currencies. A strong dollar can have an effect similar to a tax on U.S. exported products and a subsidy on foreign goods entering the United States. On Sept. 22, 1985 chief financial officers of the five leading industrial nations -- West Germany, France, Japan, Great Britain, and the United States -- intervened in the currency markets in order to improve the exchange rate balance among those foreign currencies and the dollar. While there was a significant reduction in the value of the dollar during the last quarter of 1985, the extent of the impact from the realignment of currencies on U.S. agricultural exports remains to be seen. The compounded negative effects of exchange rates and higher-than-market price U.S. loan rates are dampening foreign demand for U.S. agricultural commodities.

The combination of a strong world supply and weak world market demand for farm commodities has resulted in sharp (and some claim unfair) competition among agricultural exporting countries vying for larger market shares overseas.

Growing out of the agricultural trade competition is an increased emphasis on international trading relationships among exporting nations. Prompted by increased trade competition, the United States has become increasingly vocal in its claims of unfair trading practices, particularly against the European Community's practice of export subsidization.

In 1985 the Administration, hoping to speed up the process of determination of unfair competition, renewed the issue of Section 301 cases. (Section 301 of the Trade Act of 1974, as amended, empowers the President to take any appropriate actions to eliminate other countries' unfair trade practices deemed injurious to U.S. export market shares.)

In addition, in 1985 interest in a new round of GATT negotiations was expressed. Actions are currently underway to begin the process in the fall of 1986. One of the areas planned for discussion within the upcoming GATT talks is liberalizing agricultural trade.

Despite increasing trade rivalry and declining U.S. agricultural exports in recent years, the United States is still the largest agricultural exporter in the world. Wheat, feedgrains, and soybeans have historically been the commodities of the largest exported volume and value.

The ten largest foreign markets for U.S. agricultural commodities in FY84 were : Japan ($7 billion), USSR ($2.5 billion), Netherlands ($2.2 billion), Mexico ($2.0 billion), Canada ($1.9 billion), South Korea ($1.8 billion), People's Republic of China ($1.4 billion), West Germany ($1.3 billion), Spain, including the Canary Islands, ($1.2 billion), and Egypt ($.9 billion). While the ranking of these countries may change somewhat from year to year, generally in recent years these countries have consistently been top markets for U.S. products.

Summary of Current Federal Export Promotion Programs as Supplemented by the 1985 Farm Bill

The United States Government utilizes a wide range of tools designed to promote agricultural exports, thereby bolstering the American farm economy. Commercial export credit, general export promotion programs, and foreign food assistance are the primary tools currently used. Export subsidies have also been used during the 1960s and in recent years in the form of export PIK, although their at promoting agricultural exports, the domestic farm programs (i.e., price support programs) also have a direct effect on the level of U.S.farm exports.

The 1985 omnibus farm legislation (P.L. 99-198) signed into law Dec. 23, 1985, resulted in a general lowering of loan rates for wheat, feedgrains, cotton and rice over the next 5 years (which should make these products more price competitive in international markets) and amended a large number of export promotion programs.

The trade title indicates Congress' intent to exert more control over agricultural export programs with words such as "mandates", "directs," and "requires." Secretary Block has stated that this farm bill is more aggressive than ever before in export promotion.

Commercial Export Credit

Since the mid-1950s the United States has used the extension of credit to potential foreign buyers to expand commercial agricultural exports. Seeking to significantly increase U.S. export sales in foreign markets, Congress expanded funding of many of these programs in the 1985 farm bill.

Today several agricultural export credit programs exist: (1) GSM-102 provides short-term loans (6 to 36 months) which are made by U.S. banks at commercial rates of interest with the CCC guaranteeing repayment of 98% of the principal and up to 8% of the interest in the event of default by the foreign purchaser. This program has been the primary credit program during the 1980s because it requires no Federal outlays, unless default on the loan occurs. (Outlays have been made for a number of countries including Brazil, the Philippines, and Poland.)

The 1985 farm bill (P.L. 99-198) expanded funding authority of the short-term export credit guarantee program to a minimum of $5 billion for each fiscal year 1986-1990. This approximates the level of this program for FY85.

In addition to funding levels, another aspect of the GSM-102 program under scrutiny last year was the origination fee--a fee paid by loan recipients to help defray costs of administering the loans. Early last year the Administration recommended the fee be raised from 1/3 of 1% to 5% of the value of the loan. After much debate over potential detrimental effects of such a large increase of the fee -- reducing the value of the program to prospective buyers, thereby reducing the number of commercial buyers in the program -- the origination fee was raised to 1% by the farm bill. The increase is not believed to be prohibitive in terms of deterring foreign buyers; many think it is justified to cover the increased costs of doing business and risks of guaranteeing loans to foreign buyers.

(2) GSM-5 provides interest-free, short-term government export credit directly to the foreign purchasers of U.S. agricultural commodities. This type of program operated from 1956 to 1980 and was then replaced by the credit guarantee program. A limited direct credit program was reinstituted as part of the blended credit in 1982.

(3) The blended credit program, initiated in 1982, provides credit to foreign purchasers at lower than market interest rates by "blending" the GSM-102 market interest rate program with the GSM-5 interest free program. The blended credit program was suspended for a time in 1985 when it became embroiled in controversy regarding cargo preference applications (see IB85139 for details).

Prior to its suspension, countries receiving blended credit included Iraq, Morocco, Egypt, Jamaica, and Tunisia. Currently, the blended credit program can be used since the farm bill declared commercial agricultural export promotion programs to be exempt from cargo preference. However, it is possible that blended credit may not be available later in FY86 because of the budget deficit law (Gramm-Rudman-Hollings), which could result in a reversal of current interpretations of cargo preference (see "Other Export Promotion Issues" hereafter).

(4) GSM-201 and GSM-301 provide intermediate, direct export credit (3 to 10 years). GSM-201 provides credit for animal breeding programs overseas, while GSM-301 provides credit for the export of U.S. agricultural commodities.

Funding for intermediate export credit was not only dramatically expanded in the 1985 farm legislation, but funding for Federal intermediate credit guarantees was also included for GSM-301. Funding for FY86-88 is stipulated to be a minimum of $500 million, with a maximum of $1 billion for FY89 and FY90. Repayment of the intermediate loans must be in dollars, and the Secretary of Agriculture is to determine the rate of interest.

(5) A revolving agricultural export credit fund was authorized in omnibus agricultural legislation in 1981 to provide both short and intermediate direct credit for export sales of agricultural commodities and breeding animals, as well as to finance the establishment of import and handling facilities in developing countries. However, no funding was ever made available to the revolving fund. The 1985 farm bill extended authorization of this fund until Sept. 30, 1990, again, however, providing no funding for it.

During the first session of the 99th Congress, many Members dealing with the farm bill perceived exports to be one solution for a weakened farm sector and perceived export credit programs to be one of the most useful tools for export promotion. The dilemma Congress faced was to make the most cost-effective choices in an era of severe budget restrictions.

While most analysts agree that exports are a partial solution to the farm dilemma and that the effort to expand export credit programs should result in increased commodity exports, the benefit provided to the American farm sector may require monitoring to insure that the objectives of the export programs are met. Export credit programs are designed to help the domestic farm sector; however, domestic commodity programs could nullify or reduce the net positive effects of these export programs by expanding production or increasing prices (thereby reducing U.S. world price competitiveness).

Foreign Food Assistance

P.L. 480 and Section 416 of the Agricultural Act of 1949 are the two primary U.S. foreign food aid programs. P.L. 480 is the largest U.S. foreign food aid program, shipping about 4-5 million metric tons of farm commodities overseas each year. Section 416 of the Agricultural Act of 1949 is a much smaller program which provides for the donation of surplus wheat and dairy commodities (the list of eligible commodities was expanded by the 1985 farm bill) as needed to fill a short-term food deficit. In contrast to P.L. 480, the amount of food donated under Section 416 amounted to 212,000 metric tons in FY85.

P.L. 480, reauthorized and extended to 1990 by the 1985 farm bill, consists of four titles. Title I is the concessional sales program (selling agricultural commodities to developing countries by providing long-term loans at very low interest rates). Title II is the foreign food donation program whereby commodities are donated for emergency disaster relief, regular feeding programs, and economic development in recipient countries. The commodities are distributed through national governments, private voluntary organizations (PVOs) and international agencies such as the World Food Program. Title III is the Food For Development Program. Recipient countries can reduce or eliminate their Title I loan obligations by using proceeds from the sale of Title I commodities for U.S.-approved development projects. Title IV is the farmer-to-farmer program that was to send U.S.agricultural experts to developing countries to share information and agricultural techniques, but until last year, had never been funded.

The 99th Congress, in striving to increase agricultural exports in future years, attempted to expand foreign food aid programs in a number of ways within the context of the farm bill. For example, Title I of P.L. 480 was amended to allow sales of commodities for local (inconvertible) currencies.

Proceeds from these sales will go toward promoting private enterprise within the recipient country. Minimum required annual tonnage donated under Title II was increased to 1.9 million metric tons from 1.7 million metric tons. Of the 1.9 million metric tonnage, 1.425 million metric tons are required to be distributed by PVOs. In addition, Congress requires at least 75% of Title II commodities to be fortified, processed, or bagged. The maximum level of Title III agreements was reduced from 15% to 10% of the value of all Title I agreements for any fiscal year.

Section 416 was amended in the farm bill by increasing the list of eligible commodities exportable under the foreign donation program from surplus wheat and dairy to all commodities held in surplus by the CCC. These commodities, in addition to being donated, can be sold or bartered. Furthermore, the CCC may pay domestic processing and handling costs incurred under Section 416 with in-kind payments of eligible commodities.

Congress also supplemented the existing foreign food assistance programs with a provision entitled "Food For Progress." In this provision, commodities either from Section 416 or P.L. 480 can be programmed on a multi-year basis to countries that have made commitments to promote free enterprise in their agricultural sector via appropriate commodity pricing, improved market access for their locally produced goods, and increased private sector involvement. Payment for commodities provided by P.L. 480 is to be identical to Title I procedures. However a minimum of 75,000 metric tons of commodities is to be provided on a grant basis from Section 416 programming, and therefore, payment will not have to be made. Under the Food for Progress provision, a maximum of 500,000 metric tons of commodities will be available for each of the fiscal years 1986 through 1990, with some coming from P.L. 480 Title I, on a grant basis. A maximum funding of $30 million (exclusive of commodity costs) from CCC can be supplemented by P.L. 480 Title I appropriations.

Export Subsidies

In 1983, to meet increasing export competition in world markets, the United States negotiated subsidized wheat flour and dairy sales with Egypt, undercutting the European Community's export sales to that country. Despite subsequent criticisms from the European Community that the action violated GATT, and from some U.S. analysts that the action showed limited, if any, success in recapturing foreign market shares, another export bonus program was established in 1985.

With pressure from Congress and with continual declines in agricultural exports, Secretary Block announced the implementation of an export PIK program, otherwise known as the Export Enhancement Program (EEP) or GSM-500. It established as a 3-year program involving $2 billion worth of surplus agricultural commodities to be targeted toward those markets where the United States has lost its competitiveness due to perceived unfair trade practices of other agricultural exporting countries. Under the program, the surplus CCC commodities supplement commercially sold commodities going to specified countries. As of early January 1986, $77.5 million worth of commodities had been committed to ten participating countries--Algeria, Egypt, Yemen, Morocco, Turkey, Zaire, Jordan, Philippines, Iraq, and Nigeria.

To establish a stronger congressional voice in the program's implementation, the farm bill mandated the use of such an export promotion program, requiring the Secretary of Agriculture to use $2 billion worth of commodities over the next 3 years, through 1988, to counter subsidies and unfair competition overseas. Furthermore, Congress required that at least 15% of the total funds are to be used for the promotion of exports of poultry, meat and meat products. In contrast to the the Administration's Export Subsidy Program, the congressionally mandated program does not target surpluses only to markets where U.S. sales have been eroded by foreign competitiveness, but makes surpluses available across-the-board for the expansion of markets overseas.

Many disagreed with the EEP program. The European Community (EC) has been highly critical of it. While the program's primary purpose was for the United States to become more competitive in foreign markets that largely have been eroded by European agricultural exporting practices, EC officials contend that in doing so, the United States is also guilty of unfair trading practices. Furthermore, some analysts contend that the program benefits commercial exporting companies, not the farmer, because the bonus commodities promote commercial transactions that may not have taken place otherwise, but do not result in augmented farm income. Moreover, critics claim that dependable foreign markets for U.S. agricultural products are not the recipients of this program's benefits, but rather the countries that have taken their business elsewhere.

In addition to an expanded export PIK program, the 1985 farm bill also authorizes the Secretary of Agriculture to make green dollar certificates available to commercial agricultural exporters. Exporters can bid for certificates which could be redeemable for CCC-owned commodities.

Additionally, Congress included $325 million annually in cash or in-kind for combatting competing-country subsidies, particularly with respect to successful Section 301 cases. (See archived Issue Brief 82226 for additional information on Section 301 cases.)

Besides indicating that Congress continues to be concerned with the unfair trade competition issue, these actions are expected to send a clear message to foreign competitors that the United States will take action to protect its foreign market shares. While the subsidy issue may be a problem within GATT or with upcoming GATT negotiations, many support these recent initiatives. It remains to be seen exactly what impact export subsidies will have on U.S. exports. Many anticipate that initially they will improve the U.S. trade situation and balance of trade; however, ultimately, purchasers will naturally buy from the least expensive source, and analysts are predicting limited long-run success for these subsidy programs.

Other Export Promotion Issues

The 99th Congress debated a number of other agricultural exportrelated issues during the first session. Among them were cargo preference as applied to agricultural export programs, barter, and multilateral trade negotiations. As an indication of the concern of many Members about declining agricultural trade competitiveness, Congress also instituted via the farm bill a Special Agricultural Trade and Food Aid Assistant to be appointed by the President.

Cargo preference, which since 1954 has required that 50% of all federally assisted bulk exports be shipped on U.S.-flag vessels, prompted heated debate between maritime groups and agricultural groups in recent years. The 1985 farm bill included a provision which exempted commercial export programs such as the blended credit program from cargo preference requirements.

Furthermore, a compromise was derived whereby the percentage required to be on U.S vessels for P.L. 480 and other concessional food programs would be gradually increased from the current 50% level to 60% in 1986, 70% in 1987, and finally, 75% in 1988. The provision stipulated that the difference in cost incurred from the increase in percentage be paid from the Department of Transportation rather than the USDA's budget.

While this compromise kept the increased cost of subsidizing the U.S. Merchant Marine out of the Agriculture Department, it did not address the problem of reduced agricultural exports resulting from increased shipping costs. Therefore, foreign aid groups as well as some agricultural exporting groups remain somewhat critical of this legislation. Moreover, the enactment of Gramm-Rudman-Hollings may preclude necessary Department of Transportation appropriations to fund the increased cargo preference percentages. If this occurs, application of cargo preference will revert to interpretation of the law prior to the 1985 farm bill provision; i.e., cargo preference would apply to blended credit exports.

Some Members of Congress have shown an interest in barter as an option for increasing agricultural exports. The farm bill requires the USDA to establish a pilot barter program for FY86-87. The program must involve barter with at least two countries, whereby surplus agricultural commodities (which can be made available from the CCC under the Section 416 Program) shall be exchanged for strategic or other materials to meet stockpile goals.

Another provision of the farm bill, and a subject likely to receive increasing attention in the coming months, is the requirement for the Secretary of Agriculture and the U.S. Trade Representative to pursue trade consultations with major agricultural-producing and exporting countries. The purpose of consultations would be to discuss current trade practices which are perceived to be "unfair," and to reduce the need for export subsidies.

Possible Congressional Considerations in the Second Session

The second session of the 99th Congress will likely continue to consider efforts that were initiated in the first session. While most of the issues raised concerning agricultural export promotion were dealt with in some fashion last year in the farm bill, there are some remaining issues, possible fine-tuning, and of course, general trade issues which affect agricultural exports -- such as dollar value, budget deficit effects on interest rates, foreign food aid and the situation overseas, especially in Africa. Some agricultural analysts are particularly interested in export promotion of high-valued or value-added products, while others are suggesting that the United States work harder to expand markets in Pacific Rim nations such as South Korea, The Philippines, Taiwan, and newly industrialized countries (NICS) such as Mexico and Brazil. Other issues of concern for this year may include international debt effects on agricultural exports, effects of deficit-reduction measures on export promotion programs, and oversight of trade activities authorized or expanded under the 1985 farm bill.

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ISSUE DEFINITION

U.S. agricultural exports have been falling since 1981. Economic factors, such as the worldwide recession of the past few years and the high value of the dollar, have been major contributors to this situation. Also affecting agricultural markets, though, are various policies and practices of other countries which serve to (1) reduce the volume of agricultural goods traded and (2) reduce the U.S. share of whatever volume of world trade does exist.

This issue brief deals with non-economic factors in U.S. agricultural trade relations. Since many agricultural trade problems are created by actions of sovereign nations, the primary U.S. leverage is diplomatic, exercised through bilateral and multilateral channels. The issue for Congress is whether U.S. negotiators are armed with the most effective U.S. policies in support of their goals of increasing world agricultural trade and assuring an appropriate share of that trade for U.S. products and, if not, what modifications in U.S. policy would be most helpful in support of U.S. negotiations goals. (Agricultural export promotion activities are discussed in IB86023.)

BACKGROUND AND POLICY ANALYSIS

From 1972 to 1981, world agricultural trade boomed, both in terms of volumes and value. During this decade populations increased, most economies grew, and agricultural production in many countries could not keep up with domestic demand. Many countries, particularly developing countries finding easy credit terms from major exporters, imported agricultural products under "cheap food policies" to satisfy urban residents. U.S. agricultural exports increased to meet this demand and grew from less than $10 billion in 1970 to over $40 billion in 1981.

In 1981, the boom in U.S. exports ended. Both the volume and value of U.S. agricultural exports have declined. Several circumstances in world agricultural markets have changed. First, many countries have begun to benefit from policy changes of the 1970s and have begun to produce more of their own food. A few, China and India for example, began to export farm products in competition with the United States. Second, U.S. export prices in terms of the currencies of the importers rose due to the high appreciation of the dollar. Third, importing countries now are finding credit much more expensive and are borrowing less. Consequently, trade totals are declining and other exporters are competing more effectively for what trade remains. This decline in U.S. agricultural exports has motivated the U.S. Government and Congress to reverse this trend.

MULTILATERAL AGRICULTURAL TRADE RELATIONS

Principles of the GATT. The United States joined the General Agreement on Tariffs and Trade (GATT) in 1947 as a founding member, to support the concept of having a negotiating forum in which member nations (or Contracting Parties, as they are called) reach political agreements on international trade rules and work out trade disputes. The GATT established a framework under which problems could be aired and negotiated among countries, and where members could negotiate lower tariffs and nontariff barriers.

The four basic principles of the GATT apply to agriculture as well as to trade in manufactured goods. The first principle in trade relations is equality or non-discrimination and reciprocity, as expressed in the first article of the GATT or the most-favored-nation (MFN) clause. The MFN clause commits GATT member countries to grant to each other treatment as favorable as each of them gives to any country in the application and administration of import and export duties or other charges. Exceptions to the MFN ruling are regional groups like the European Community (EC) and developing countries from whom full reciprocity in trade matters is not required.

The second principle is that all member nations should protect their domestic industries, when needed, only through customs tariffs, thus making the extent of protection clearly visible to all members and, in addition, easier to negotiate. The extent of protection through nontariff barriers (NTBs), such as technical standards and import quotas, are more difficult to negotiate because it is more difficult to know at times the nature of the products the NTBs protect.

The binding of tariffs is the third principle in the GATT. A "bound" tariff level is a guarantee by each member to other members that the negotiated tariff rate will not be changed without consultation and compensation, providing a stable and predictable basis to international trade. Negotiations for lowering tariffs take place in meetings called Multilateral Trade Negotiations (MTN) or "GATT Rounds". The latest GATT Round held was the Tokyo Round, 1974 to 1979. In this forum, countries bilaterally negotiate to obtain and grant tariff concessions on individual commodities or products of high interest in their mutual trade. Once agreement on whole tariff schedules is reached between interested countries, the tariffs are automatically bound under Article II of the GATT and apply to all trade of that product of every Contracting Party.

The fourth principle states that contracting parties consult each other when one member feels its trade interests under GATT are being prejudiced. These consultations are both informal and formal. If informal consultations do not produce satisfaction on both sides, the offended member files a formal complaint. A panel made up of non-involved contracting parties investigates the evidence from both sides of the trade dispute, and produces a report, presenting its findings, and making recommendations for a solution to both parties to the dispute. Such rulings are supposedly binding on the disputing parties but, since the GATT itself contains no enforcement authority and is not a trade court, enforcement depends on the willingness of the parties to accept and uphold the decision. Should a Contracting Party receive a favorable decision, GATT makes legal the use of retaliatory actions against the offending party. As a practical matter, the GATT Secretariat in Geneva never presents a panel report to the GATT Council for acceptance unless parties to the dispute have first agreed to accept the recommendations in the report. (See CRS Report No. 84-169 ENR, Agriculture in the GATT: Towards the Next Round of Multilateral Trade Negotiations.)

Ineffectiveness of the GATT for Agricultural Trade. These four principles of GATT have not proved effective for solving agricultural trade problems. Agricultural trade problems arise primarily from domestic agricultural policies of member countries. The aim of GATT is trade liberalization -- the removal of restrictive measures that distort trade. Often domestic policies have the political support of farmers and agri-businesses, making their change politically difficult. The United States itself has responded to such political pressure. In 1955 it obtained a GATT waiver permitting it to continue applying quantitative import restrictions on a wide range of agricultural products. However, without the leadership of the developed countries, and in particular the United States, developing countries have little incentive to open their agricultural sectors to world integration and trade liberalization.

With tensions and disputes on the rules for agricultural trade growing among members in the early 1980s, the Committee on Trade In Agriculture (CTA) was formed in November 1982 to examine measures affecting agricultural trade, particularly market access, export competition, export subsidies, and technical barriers to trade. CTA's "final" report, issued in November 1985, contained both the United States' and EC's suggestions for action in a two-pronged or parallel approach. The U.S. approach was an almost total prohibition on agricultural export subsidies, subject to clearly defined and limited exceptions. The EC approach called for a clarification of existing GATT rules on export subsidies. The EC insisted upon this view because of their belief that their subsidies have not led to more than an equitable share of world markets. The GATT Council accepted the CTA report in November 1985 and has asked the CTA to continue to work on these issues.

U.S. Considers GATT Rules Have Failed. Rules for agricultural trade have never been high on the negotiating agenda in the GATT. Because domestic agricultural policies are so important in many countries for political support to governments, including the United States, there has not been the incentive to negotiate strong rules regarding agricultural trade. Disputes have therefore arisen that follow the dispute settlement process under the GATT. The principal method for U.S. agri-businesses to challenge what they may consider unfair trading practices of U.S. trading partners who are members of the GATT is by petitioning under a U.S. law (Section 301 of the Trade Act of 1974). This Act authorizes the President to enforce U.S. rights under international trade agreements and to respond to certain unfair foreign trade practices. The thrust of action under Section 301 is toward eliminating the unfair trade practice in question or taking a retaliatory action which may provide a remedy.

In the last 4 years there have been several petitions against unfair trade practices of foreign governments through the Office of the U.S. Trade Representative involving agricultural products: wheat flour, citrus, poultry, pasta, canned fruit and raisins, tobacco, soybean oil and meal, cattle hides, rice and sugar. Since 1979, just one, a petition against EC subsidies on canned fruit, has been settled. This settlement came at the end of November 1985 after 4 years of negotiation, and use of the GATT dispute settlement procedures. Several others have been terminated or withdrawn without being satisfactorily resolved.

Changes to GATT Rules Proposed

Three separate circumstances have elicited Contracting Party support for making agricultural trade rules more effective. The volume and value of world agriculture trade is diminishing; trade conflicts appear to be escalating (e.g., the "Pasta War" between the United States and the EC; see CRS Rept. No. 85-1119, Brief Chronology of the Pasta War between the United States and the European Community); and support for domestic agricultural policies and subsidized exports is becoming a large and unpopular burden for many countries' budgets.

It is widely believed that GATT rules could treat agricultural trade more effectively. A new agricultural trade code has been proposed to make the rules more detailed, and possibly extend their scope. Hard choices and incentives will be necessary to encourage adjustment of agriculture policies to the GATT trade liberalizing principles. Several Members of Congress have contemplated rule revisions for some time.

Early in 1985, President Nakasone of Japan and President Reagan both called for a new round of negotiations in a Multilateral Trade Negotiation (MTN). A new round would deal with areas of trade, like nuclear safeguards and agricultural trade, that are largely unsettled from earlier GATT MTN rounds. With the prospect of a new round in mind, several Members of Congress have proposed changes to current GATT rules:

1. eliminate agricultural export subsidies;
2. strengthen enforcement rules in dispute settlement cases;
3. graduate certain developing countries from GSP;
4. replace quotas by tariffs;
5. enforce linkages between the GATT and the IMF.

Such proposed rule changes illustrate how Congress may attempt to get other countries to play the world agricultural trade game by U.S. rules.

In the Tokyo Round, the Contracting Parties developed -- and many acceded to -- a code of conduct on Subsidies and Countervailing Duties. The purpose of the code is to eliminate the adverse effect of export subsidies in international trade and to address the impact of domestic subsidies on trade. The Code reaffirms permission to use export subsidies on primary products, including agricultural commodities, and bans subsidies aimed directly at promoting exports for non-primary products. The former, however, may not be applied in a manner that gives the subsidizing country "more than an equitable share of the world export trade in the product concerned."

Problems arise because "equitable share" is not well defined. In the view of the United States, the rules on export subsidies have been interpreted too loosely. The United States claims that the European Community system of export subsidies (called "export restitution or refunds" in the EC) has diminished U.S. shares in major world agricultural markets. In fact, in the Export Enhancement Program that USDA began in May 1985, and authorized in the Food Security Act of 1985, the U.S. joined the EC in directly subsidizing agricultural exports by committing up to $2 billion Commodity Credit Corporation inventory commodities as bonuses to U.S. exporters from FY86 through FY88. The program will subsidize sales to targeted markets where the United States has lost its market share in recent years.

The idea of eliminating all agricultural export subsidies has support among many Members of Congress, the Administration and large farmers who see the cost of subsidizing exports escalating in the United States. Also, support comes from EC consumers, taxpayers, and budget administrators who think export subsidies are too expensive. Opponents of their elimination are the three major beneficiaries of these subsidies: U.S. farmers exporting crops through U.S. Department of Agriculture (USDA) export credit and bonus programs; European farmers who could not compete on world markets without some export subsidies; and importing nations who pay less for their agricultural imports than would be the case without agricultural export subsidies.

Several bills before Congress contain provisions requiring Administration response if trading partners do modify export subsidies. H.R. 2809/S. 1438, H.R. 3777 and H.R. 1950/ S. 1356 require that a country eliminate export subsidies within one year (5 years for developing countries) and not increase, extend, or add export subsidies if the country wants to be considered a "country under the agreement" in countervailing duty cases. If a country is "under the agreement," it has the right to an "injury" test (whether the U.S. domestic industry is injured or threatened to be injured by the import). Otherwise mere proof of subsidization is enough for a countervailing duty to be levied. S. 1860/H.R. 3847 and S. 1865 would eliminate differences in treatment of primary and nonprimary products under the subsidies code. H. Res. 260 calls upon the President to revise GATT rules so agricultural export subsidies would be treated the same as tariffs and primary products the same as manufactured products. Such bills intend to give the President enough negotiating leverage to mitigate some of the effect of export subsidies on agricultural markets.

There would be consequences in the United States to a change in export policy. Many USDA export promotion programs, including P.L. 480 and concessional credit sales by the Commodity Credit Corporation, would be eliminated with the banning of agricultural export subsidies by GATT Contracting Parties. In addition, lower loan rates in the 1985 Farm Bill could be contested as having similar trade distorting effects as export subsidies, because U.S. farmers' incomes are maintained through deficiency payments.

Strengthen Enforcement in Dispute Settlement Cases. Some Contracting Parties, as well as some agri-interests in the United States, think that before countries agree to opening their economies to agricultural imports and incurring considerable adjustment costs, it is necessary to address complaints of those countries which believe other signatories are presently violating the agreement. Thus enforcement or at least some agreement on a process for enforcement of existing provisions is seen by some as a precondition for acceptance of other agenda items for the new round.

Articles XII and X'II of the GATT provide the general consultation and dispute settlement procedures. While the specific mechanisms and time limits vary, depending on the Code or Article under which a dispute is filed, common steps include (1) provisions for bilateral and multilateral consultations seeking to reach a mutually satisfactory solution without resort to dispute settlement; (2) the right of any signatory to a panel of 3 to 5 impartial experts from countries not parties to the dispute acting in their individual capacities, which reviews the dispute and makes findings of fact and law; and (3) submission of panel findings to the GATT council or member council of the Code which reviews the decision and may authorize retaliatory action.

To strengthen the enforcement of these final GATT decisions, a few Members of Congress have proposed the establishment of a roster of nongovernmental GATT experts who -- along with governmental participants -- would be members of GATT dispute settlement panels. In addition, there would be meetings on a ministerial level for monitoring the extent to which GATT decisions are being adhered to. Opponents of such a rule change, like the EC, have on the whole benefited from the looseness of enforcement powers of the GATT. Neither the EC, nor any other GATT member, is required to accept a negative GATT panel decision. The rules of GATT contain no compulsory compliance clauses nor enforcement authority. Any strengthening or change of dispute settlement provisions would mean stronger compliance to decisions. Few beneficiaries of the present system want such a change unless they gain substantially in some other sector.

Graduation of Developing Countries. Many countries maintain closed and highly protected agricultural markets. Such protection has led many in Congress to call for "increased market access" to these foreign markets, particularly with respect to Japan and developing countries. Yet the GATT rules currently allow several methods of protecting domestic markets from giving full market access to imports. Article XII, for example, allows import quotas in countries with balance of payments problems. And, in the context of economic development measures, Article XVIII of the GATT allows developing countries to use infant-industry protective tariffs such as balance-of-payments quantitative restrictions to prevent access for imports. In addition to protecting their markets, most developing countries benefit from being able to export to developed country markets under special preferential tariff rates. These special rates are in systems called Generalized Systems of Preferences (GSP). Through tariff preferences in developed country markets, developing countries increase exports and foreign exchange earnings needed to diversify their economies and reduce dependence on foreign aid. To implement GSP in several developed Contracting Party countries, a 10-year MFN waiver was granted in June 1971 through the "enabling cause" of a Code of Conduct. The enabling clause, which has no expiration date, provides the legal basis for "special and differential" treatment, as well as the principle of graduation under which such countries agree to assume "increased GATT reponsibilities as their economies progress." Developing countries use many reasons for not "graduating" into the full responsibilities of a GATT member.

The U.S. GSP program (extended under the Trade and Tariff Act of 1984 to run through July 4, 1993) is designed to give a competitive edge to countries that are relatively new and small suppliers of a particular product by allowing duty-free imports into the United States of many of their products. A product imported from a specific developing country loses its duty-free status if that country becomes a sizable supplier, meaning more than 50 percent of U.S. imports of that product or more than a certain dollar value indexed by the growth of the U.S. Gross National Product (GNP) ($63.8 million in 1984). These restrictions on GSP eligibility, which constitute the "competitive need" rule, remove the GSP/duty-free benefit from imports of individual products in which the exporting country is already competitive in U.S. markets. The rule, however, does not apply to countries at the lowest level of economic activity--the least developed developing nations. Overall product eligibility is also reviewed each year to take into account any potential adverse impact on U.S. industries. In addition, a product may lose its eligibility either with respect to its imports from a particular country or overall if, in the opinion of the United States, it has become competitive (without reaching the "competitive need" limits).

Congress is now addressing what it considers unfair trading practices of some developing nations which benefit both from preferential tariffs under the U.S. GSP program and from the ignoring of full reciprocity responsibilities of GATT membership. Eligibility for privileges has been controversial, because some developing countries, particularly the newly industrializing countries (NICs), continue to benefit from preferential tariffs while imposing severe tariffs and other restrictions on their imports.

S. 1860/H.R. 3847 and S. 1865 would require that the President set criteria with time limits for the full "graduation" from GSP for advanced developing countries. Middle income countries like Korea, Taiwan, and Hong Kong, are mentioned in these bills. Controversy has again arisen over definitions: What is "success" in terms of trade and in terms of economic development? NICs claim that they are not ready for full "graduation" either from the U.S. GSP program or to the level of a developed country for full acceptance of GATT obligations. Meanwhile, developed countries claim that full reciprocity in trade with the NICs is warranted. Proponents of "graduation" maintain that growth in U.S. agricultural exports depends on increasing imports into developing countries. Since market access is limited due often to nontariff barriers that are legitimate in the rules of GATT, the proponents want the rules changed. Opponents caution that GSP should not be used to penalize model developing countries which are taking the free trade route to development.

Quotas Turned into Tariffs. In setting GATT negotiation goals, the language of S. 1860/H.R. 3847 would substitute import quotas for tariffs or auctioned quotas, and would give new authority for such a substitution in U.S. trade laws. This change would be entirely consistent with the principle of the GATT of "protection through tariffs," rather than quantitative restrictions. Opposition to such a change in the U.S. would likely come from the producers of sugar, dairy, peanuts, and cotton, presently benefiting from import quotas. Supporters of this measure see that in order to gain agreemont on changes in other sectors and provisions, the United States will need to make concessions in agriculture, such as reducing current quotas on agricultural products to tariffs or auctioned quotas.

Strengthen Links Between the GATT and the IMF. S. 1860/ H.R. 3847 set, as another negotiating objective in the GATT, an increase in GATT coordination with the International Monetary Fund (IMF) and the World Bank to ensure GATT participation in IMF's stabilization programs and the World Bank's structural adjustment loan programs. Some Members of Congress, reacting to the world surplus commodity situation, want to restrict the multilateral banks' discretion on project lending to increase the capacity for the production of commodities that are in surplus in world markets already. De facto, such restrictions would curb funds to promote production of agricultural products produced in abundance by the United States.

International Commodity Agreements

International commodity agreements are multilateral agreements signed by producing and consuming nations. Some agreements containing economic provisions are intended to stabilize the price and supply of an internationally traded primary commodity (agricultural or mineral) and closely related products. The attraction of this type of agreement is the incentive of lessening extreme price fluctuations on world markets due to periodic adverse weather conditions, economic cycles, or other causes. Prices within negotiated ranges are supported through buffer stock provisions, export-import controls, and long-term contracts. Often a central organization administers the agreement for its members and disseminates information about the production and trade of the commodity. The United States is currently a member of two agreements with price stabilizing functions, coffee and rubber; and a member of three non-price stabilizing agreements for sugar, wheat, and bovine meat.

BILATERAL AGRICULTURAL TRADE RELATIONS

In part because of the failure of multilateral negotiations to settle disputes in agricultural trade to the satisfaction of the United States, and in part because the United States wants to gain a further advantage in agricultural trade, or at least prevent further deterioration in the value of U.S. agricultural exports, the United States has increasingly conducted bilateral negotiations with trading partners. These negotiations follow two thematic approaches: one is to guarantee the availability of supplies of agricultural commodities to trading partners and insure markets for U.S. exporters; the other is to eliminate, through negotiation, barriers to trade. The first type of initiative appears to be a practical solution to certain circumstances; the second is in keeping with the principles of the GATT to reduce or eliminate both tariff and nontariff barriers to trade.

Long-Term Supply Agreements

Confidence in the availability of U.S. supplies of agricultural commodities has been a recurring theme in bilateral negotiations with U.S. trading partners. Part of the reason for its emphasis is the severe political consequences of food shortages. Embargoes, whether for foreign policy reasons or short supply, are very disrupting to trade relations. If importing countries perceive that there is a risk that grain will not be available from the United States when needed, they have a strong incentive to maintain trade barriers, to invest extra resources in agriculture, and to push for self-sufficiency in food production even though such a diversion of resources to grain production may be uneconomical given expected world prices. If the U.S. grain supplies appear reliable, then countries might be more willing to increase grain imports and use their scarce resources to produce and trade other goods.

One method for relying on U.S. grain supplies is through long-term grain agreements. At the present time, the United States has only one of these agreements, the U.S.-USSR Long-Term Grain Agreement. This agreement, signed for the first time in 1975 and for the second time in 1983, has guaranteed the Soviet Union for 5 years certain annual supplies of wheat, corn, and soybeans, if desired. It also has obligated the Soviet Union to purchase certain minimum tonnage of these products in the United States. Since the Soviets have been mainly interested in purchasing feed grains, this obligation benefits wheat and soybean producers. The advantage to this agreement for the United States is that through periodic consultations, the United States has some notion of what the USSR intends to purchase from the United States. It, therefore, lends a note of stability to grain markets that was not there before. Grain farmers, who see the USSR as the largest grain market in the world and see the agreement as a gesture of goodwill and evidence that the United States is a "reliable supplier," also favor this agreement. They point to the fact that in 1980 when President Carter placed an embargo on goods to the Soviet Union, the United States maintained its obligation to ship the minimum amounts of tonnage of the agreement.

The opponents of this agreement consider that the United States should not be trading with our chief political enemy. Other critics think that the agreement would benefit from clauses that provide some retribution in the event that agreement terms are breached; they point to the 1985 purchase year when the USSR did not live up to its commitment to purchase 4 million metric tons of wheat. The agreement has no penalty clauses for non-compliance.

U.S.-Israel Free Trade Agreement. A free trade area, established through an agreement between two or more trading partners, eliminates tariffs and other trade barriers on virtually all elements of their trade. The U.S.-Israel Free Trade Agreement (P.L. 99-47, signed June 11, 1985) eliminates duties on the mutual trade in stages ranging from immediate duty free status to a freeze of current duties for 5 years, at which time further negotiations will take place. The agricultural products considered particularly sensitive to changes in duties by U.S. producers and U.S. International Trade Commission (ITC) include artichokes, avocados, pimentos, peppers, processed tomato products, citrus products, dehydrated onion and garlic, cut roses, and certain olives. In return, the United States will delay unlimited exports of garlic, olives, dates, grapes, apples, apricots, unprocessed tobacco, certain dairy products, and other manufacturing goods. Both the United States and Israel have agreed to bring these products under the agreement by Jan. 1, 1995.

Also as part of the agreement, Israel undertakes to end within 6 years all subsidies it pays to stimulate exports of both industrial goods and processed agricultural products and has agreed to sign the GATT Subsidies Code. Israel also will liberalize its licensing practices, which to date have been applied in a highly arbitrary manner, according to U.S. Administration officials. In addition, each party agrees that the other has the right to balance measures which could affect the balance of concessions under the Agreement. And there is a commitment by both parties to expand access to each other's government procurement markets beyond the levels negotiated under the GATT Government Procurement Code. Imports will have the same test of content required under the "rules of origin" adopted for the Caribbean Basin Initiative. This agreement is to serve as a model for "free trade" agreements and is supposed to aid in negotiations with Canada.

U.S.-Canadian Free Trade Agreement. At the present time, there are preliminary discussions under way about the establishment of a free trade area with Canada. Unlike the United States, Canada will have to obtain approval of a bilateral pact with representatives of the Provinces. They have only met once to discuss limits on products that will come under the agreement. In the United States, H.R. 3522 would authorize the Administration to negotiate with Canada for a free trade zone. The trade subcommittees of the Senate Finance and House Ways and Means Committees will probably hold hearings this spring.

Agriculture will be one of the more difficult sectors to negotiate in this proposed free trade area. Both countries have programs that support farmers' incomes and protect domestic markets from imports. A free trade area by eliminating tariffs will increase competition from U.S. imports in horticultural products, while the nontariff barriers that exist will require significant adjustment for U.S. and Canadian dairy, U.S. sugar, and Canadian poultry and egg and wine industries.

CONCLUSION

Bilateral negotiations with U.S. trading partners appear to have had some success for agricultural trade relations. The Trade Act of 1974, as amended, authorizes the President and the Administration to "harmonize, reduce, or eliminate nontariff barriers or other trade distorting measures" to trade, including agricultural trade; and gave limited authority to modify tariffs, which has expired. Congress is now considering what powers and instructions to give the President to negotiate tariff reductions and other issues in the new round of the GATT MTN. Such congressional action would be necessary for the Administration to participate in the new round to lower barriers to U.S. agricultural exports and to change the rules of trade in order to gain an advantage for these exports.

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Excerpted from "U.S. Bilateral and Multilateral Food Assistance Programs,"
by Susan Epstein. Washington, Congressional Research Service, 1985.
(Report no. 85-114 ENR) p. 39-46.

FOOD AID--BLESSING OR BLIGHT?

In 1954 when P.L. 480 was established, most policymakers believed this food assistance program could have only positive effects. P.L. 480 seemed to be a perfect combination of a disposal program for surplus agricultural commodities as well as a humanitarian program for feeding the world's poor.

As studies on the effect of food aid were conducted over the ensuing years, the pendulum of public and expert opinion began to shift from the extremely positive attitudes toward food assistance programs in the mid-50s, to more negative attitudes in the 1960s. For example, Nobel-prize winning economist, Theodore W. Schultz, wrote in 1960 about the possible long-term negative effects of food assistance programs. In his article, "Value of U.S. Farm Surpluses to Underdeveloped Countries," 8/ Schultz stated that the decline of farm prices in the assisted-country resulting from food assistance programs could have detrimental effects on growth in the developing country's agricultural sector. Other concerns expressed in the 60s included the long-term dependency of recipient countries on food aid as well as the possible negative effects of food aid on recipient countries' 1) agricultural prices, 2) farm and food policies, 3) nutritional levels, and, 4) population growth.

As more studies were conducted and available data grew, a more moderate view of food aid emerged during the 1970s. Leading economists acknowledged that indeed possible negative effects of food assistance programs did exist, however, the negative effects were not as extreme as

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8/ Schultz, Theodore W., Journal of Farm Economics, Dec. 1960.

previously believed. According to these economists the questions that needed to be asked were: Do the negative effects outweigh the positive effects? And, is aid with some negative effects better than no aid at all? These are some of the questions Congress has addressed in the past and will continue to be aware of as P.L. 480 is reauthorized in 1985.

Price Effect of Food Assistance

The argument most often presented against food aid is as follows: when a large quantity of agricultural commodities enters a developing country, the domestic prices of those commodities as well as the prices of subsititute products decline. This translates into lower incomes for farmers in the recipient country. Lower incomes not only reduce farmers' capacity to invest in future crops, but also reduces incentives to produce, or to remain in farming at all. The net effect is that the country receiving aid does not progress in agricultural development, and may, in fact, even regress. The country may, in the short-run, continue to not produce at its maximum level and many increasingly need more aid. In the long-run, this could mean a complete loss of its agricultural sector, since farmers may leave agriculture for other means of employment.

Most studies on the subject of food aid have concluded that price disincentives do result from the provision of food aid. However, the severity of this disincentive effect and resulting impacts are debated. Some analysts have concluded that negative price effects do result from food aid, but the effect tends to be quite small. 9/ Others feel that

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9/ John W. Mellor, "Models of Economic Growth and Land Augmenting Change in Food Production," in Agricultural Policy in Developing Countries, ed. N. Islam (London: Macmillion Co., 1974).

food aid plays an insurance role that allows countries to risk investments in other areas of their development. And still others, while conceding the negative price effects of food aid, point to the dynamic effects of food aid--providing healthier people, better workers, and a future generation with greater potential because of improved nutrition. Leading economists have concluded that:

> While some of large-scale food aid should have been phased in more gradually by, in some years, stockpiling more and distributing less, the short-term price effect on food production was very limited; the medium-term income and price effect of food aid on growth was probably positive; and the medium-term effect on overall output, employment, and nutrition (as distinct from food grain production only) was strongly positive. 10/

Policy Effects of Food Assistance

A less direct and less visible effect of food aid on recipient countries is its impact on the developing countries' policies. Some observers believe that food aid has the positive effect of allowing the government to be concerned with all aspects of development, not just feeding its people. Others feel that there are negative policy effects which tend to take either of two forms: one, that food aid may mask symptoms of larger, underlying policy problems in a developing country resulting in either no policy changes or incorrect policy changes; and two, allowing governments to avoid making a needed reform (i.e., land reform) that is politically distasteful.

10/ Paul J. Isenman, M.W. Singer, "Food Aid: Disincentive Effects and Their Policy Implications" Economic Development and Cultural Change, Vol. 25, No. 2, (January 1977), p. 212.

Weaning a recipient government from the aid when it is no longer required is another potential problem of food aid programs. Many proponents of food aid believe that this is not a severe problem, arguing that most recipient governments want to avoid depending on the fluctuating surpluses of donor countries. Supporters also point to several aid recipients who have "graduated" from U.S. food aid programs. These countries, including South Korea, Mexico and Taiwan, are using commercial channels to obtain their food supplies, and are, in fact, major commercial export markets for U.S. agricultural commodities. Others, however, believe this "weaning" to be a significant problem of food aid programs, citing the very small number of nations that have actually "graduated" from U.S. food aid programs. These observers also dispell the idea that aid recipients will graduate because they do not want to remain dependent on variable donations. They argue that despite this desire, recipients may continue to devote resources to other sectors of the economy and may continue to be unable to graduate into a commercial status.

Several articles on the policy effects of food aid concluded that while negative effects on government policymaking do exist, food aid benefits in this area were at least equal or greater than the negative effects. Analysts studying the effects of food aid on India concluded that earlier food aid deliveries may have provided that country a false sense of security prior to the poor weather conditions of 1965. As a result, efforts to increase fertilizer supplies were not continued. However, these analysts also concluded that the food aid reduced financial pressure on India's government expenditures, thereby allowing growth in the economy. Food aid also provided a more secure buffer stock for India to use for food distribution programs, freeing up other resources and encouraging progress in other areas of development. 11/

Nutritional Effects of Food Assistance

The relationship between nutrition levels and food aid is controversial with both supporters and opponents of food aid. One issue is whether donors should be required to provide adequate diets with the food commodities that are shipped to developing countries, i.e., should quality of food aid take precedence over quantity? Some believe that donor countries should be responsible for contributing food for a well-balanced diet. Others feel that if food aid donors concentrate on nutrition, the volume of food aid shipped and the number of people helped will be reduced.

A second nutrition-related issue concerns the effects of misuse and improper handling of food aid. Examples of this problem abound. When dried skim milk was shipped and used by people who could not read instructions for use, were not told, or did not follow the instructions properly, the nutritional value of the food aid donated was significantly reduced. Infant formula, which was substituted for breast-feeding, reportedly was often used incorrectly, and led directly to malnutrition, disease, and, in many cases, death of a large number of infants. 12/ Improper handling of food items also has occurred because of poor storage facilities or inadequate transportation systems. In addition, donated grain is often allowed to rot or become contaminated with pests and and rodents which, again reduces its original value to the recipients.

11/ Ibid.

12/ Bond, J. T. et al. ed. Infant and Child Feeding. NY Academic Press, 1981. pp. 192-196. (Chap. 11 entitled Infant Feeding Practices in the Third World: Beliefs and Motivations) Gretel H. Pelto (author of this chap.)

A third nutrition-related concern is that people in recipient countries will acquire a taste for foods that are not available domestically. Many aid projects are aimed at pregnant or lactating women, infants, and school age children. Children especially can acquire a taste for "exotic" foods because these foods are introduced to them at an early age. As developing countries raise a new generation on food aid, future food demands in that country will change to reflect their tastes. This could insure continued dependence on future food assistance programs or on expensive imports.

Currently, legislators are considering the inclusion of high value products--processed and nutrient-fortified foods such as milk--in U.S. bilateral food aid programs. This has renewed the debate over the relationship between nutrition and food aid. While some feel this policy would be a way of promoting U.S. high value food products and simultaneously providing improved nutrition in developing countries, opponents argue that introduction of these food items will cause the world's poor to acquire tastes for goods that they would not always be able to obtain. Critics also contend that the higher cost of these items will necessarily mean less quantity of commodities shipped to fewer needy people.

While proponents of U.S. food aid programs do concede that nutrition-related concerns should be addressed, they do not believe that the present quantity of aid has to be sacrified in order to ameliorate any of these issues. By improving the existing food aid programs--administering them more efficiently, providing the appropriate foods for particular regions of the world, and including self-help measures for long-term benefits--both quantity _and_ quality can be attained. Although debate on nutritional aspects of food aid continues, increased awareness on the part of policymakers, program administrators, and commodity distributors of the possible problems is a step in achieving a program that is optimal for recipients and donors alike.

Population Effects

In the past, critics have asserted that food aid caused an increased population growth rate in a recipient country, arguing that as more food was available people would feel they could support more children. According to demographers and social scientists, experience seems to indicate that the opposite is true. [12]

People in developing countries have children for several reasons, one of which is security for the future. These analysts concluded that the combination of high death rate among children, and the desire to have children to provide security in old age, led to high birth rates. When families could feel secure about their next meal and their future, they tended to have fewer children. Therefore, these analysts contend, food aid can initiate a cycle of reducing population growth—leading to more food per capita.

Conclusion

While some experts contend that food aid can negatively affect a recipient country, others feel it can have positive effects that outweigh the negative. They believe the benefits and drawbacks should be weighed on an individual country-by-country basis.

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[12] Observations of this conclusion are cited in R.H. Cassen's book India, Population, Economy, Society, 1978; and W. Rich, "Smaller Families through Social and Economic Progress," Monograph no. 7, Washington, D.C. Overseas Development Council, 1973.

The inherent problems of food aid are better understood by donors and recipients now than a decade ago. This awareness in itself helps to reduce the negative effects. In order for food aid to be as beneficial as possible, policymakers in donor and recipient countries must strike the delicate balance required when administering or accepting food aid.

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Expanding the U.S. Share of High-Value Agricultural Exports

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The United States leads the world in agricultural exports, supplying over a third of the products traded. But while world agricultural trade has shifted over the last 15 years toward more high-value semiprocessed and processed products, U.S. exports continue to be concentrated in bulk, low-value products (LVP's) such as grain, cotton, and oilseeds.

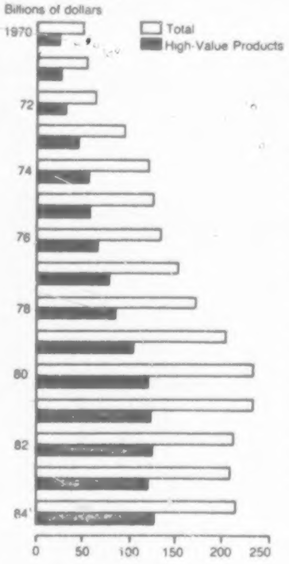
World trade in high-value products (HVP's) has grown over 14 percent per year since 1970 and surpassed trade in the traditionally dominant LVP market by the early 1980's. After a decade of particularly fast growth, HVP trade reached $120 billion in 1980, compared with $110 billion in LVP trade (*figure 1*). Growth since 1980 has slowed, but trade in HVP's continued to set records and reached $135 billion in 1984. The U.S. share of the HVP market, however, has stagnated near 10 percent despite advantages in processing and large supplies of low-cost, high-quality inputs. At the same time, other traders, notably the European Community (EC), have expanded their market shares sharply.

Broadening the composition of U.S. farm exports to include more HVP's would not only increase sales abroad, but would also boost the contribution farm exports make to the general economy. In fact, expanding the U.S. share of the world market in high-value products by just 5 percentage points—a rise from 10 to 15 percent—could give the country up to a million new jobs, add $50 billion to the Gross National Product, and increase Government revenues by $10 billion per year by the early 1990's. Moreover, it would allow U.S. agriculture to take advantage of the HVP market's faster growth rates and greater stability. The LVP's that now dominate U.S. exports have not only grown at a slower pace, but have also been significantly more variable from year to year than HVP's.

Why the HVP Market Grew

Two world markets for farm products emerged in the 1970's—one for bulk, low-value products and another for high-value, generally processed products. Increased affluence and population growth in the 1970's generated sizable increases in demand for bulk food and feed that many countries could not supply locally due to natural resource, climate, or other constraints. At the same time, many developed and middle-income countries increased efforts to upgrade and diversify diets with semiprocessed products (such as meat, high-grade flour, and vegetable oil), processed products (such as cereal preparations), and consumer-ready unprocessed products (such as fresh fruits and vegetables).

Figure 1. World Agricultural Trade: HVP's Take the Largest Slice



[1] Preliminary data.
Source: Trade data from the United Nation's Food and Agriculture Organization.

Import demand for semiprocessed HVP's grew as countries sought to strengthen their economies by developing or expanding local food processing industries. The value and employment added through processing, packaging, and other manufacturing services made food processing industries attractive investments. These facilities draw on local labor, capital, and technology, but require semiprocessed inputs often not available in the country. Oilseed meals are a prime example. The EC and Eastern European countries import large amounts of oil meal for producing meat and dairy products. Japan imports fruit and fruit pulp to make beverages. Countries import HVP's as unprocessed as their domestic facilities allow so that the largest possible share of the value added goes to the local economy.

However, the capital-intensive, specialized nature of many food processing industries limits the range of HVP's many small or medium-sized countries can produce economically for their own markets. In other cases, demand for HVP's grew faster than local production or processing capacity. As a result, imports of processed and unprocessed consumer-ready products have also expanded significantly.

Hence, virtually all the major HVP categories have shared in the trade growth of the last 15 years. About half of annual HVP trade is now made up of semiprocessed products, mostly meat, meal, oil, coffee, sugar, and cocoa. Highly

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processed, consumer-ready products such as dairy products, beverages, and cereal preparations account for a third of total HVP trade. The remaining sixth is made up of unprocessed, consumer-ready HVP's—mostly fresh fruits and vegetables.

LVP's Mean Less Impact from U.S. Exports

Increased world demand for HVP's has been filled by the EC, the United States, and several other smaller countries with large food processing sectors that have excess capacity (*table 1*). But the United States remains in a distant second place due largely to marketing problems rather than any limit on its capacity to produce high-quality, competitively priced products. Many other exporters, particularly the EC, market HVP's aggressively, using large export promotion and subsidy programs. In contrast, U.S. export programs have generally been limited to promotion and have concentrated on bulk products. Thus, while the United States increased its share of the LVP market sharply, it has barely held its own in the HVP market. Furthermore, the United States' limited HVP marketing activities and most notable HVP successes have been concentrated in the semiprocessed category.

Unlike HVP's, low-valued, bulk products generally involve relatively little economic activity outside of agriculture. Hence, the concentration of U.S. exports in LVP's has tended to limit their contribution to the economy. For example, a more balanced mix of exports reflecting the full range of LVP's and HVP's produced and consumed domestically would generate 25-50 percent more employment than the current basket of exports (*figure 2*). Agricultural exports would also contribute 50 percent more to the GNP with a more balanced mix of products (*figure 3*). For example, EC exports of $1 billion in processed farm products generates almost 50 percent more employment and economic activity than U.S. exports of $1 billion in bulk products.

The LVP concentration has also limited growth in the value of U.S. farm exports and the U.S. dollar share of world agricultural exports. In volume terms, the U.S. market share increased from one-fifth in 1970 to a peak of two-fifths in 1981. In value terms, however, the U.S. share of world exports stagnated at about one-sixth. The trade slowdown of the 1980's has reduced the U.S. share of world agricultural exports to approximately one-third and the value share to less than 13 percent.

This role as a bulk supplier has been reflected in changes in U.S. export unit values. U.S. export prices doubled during

Table 1. The EC Takes the Lead in HVP Exports

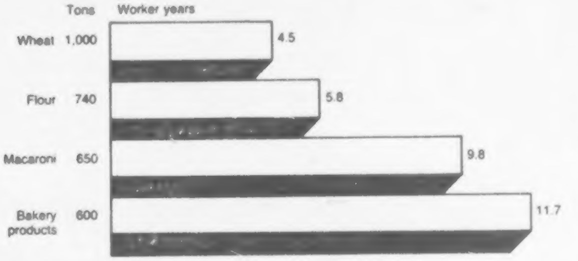
Country or region	1970 Volume[1]	1970 Value[2]	1980[3] Volume[1]	1980[3] Value[2]	Growth rate 1970-80[4] Volume[1]	Growth rate 1970-80[4] Value[2]
	1,000 tons	Million dollars	1,000 tons	Million dollars	Percent	Percent
EC-9 (total)	22,495	8,649	86,394	53,488	14.4	20.0
EC-9[5]	6,279	3,140	18,569	19,876	8.4	21.0
United States	10,405	2,380	23,081	11,378	8.3	16.9
Brazil	2,830	1,342	8,509	5,771	[6]13.0	17.6
Spain	3,424	714	4,076	3,295	1.8	16.5
Australia	1,067	793	1,731	2,777	5.0	13.4
New Zealand	1,030	677	1,515	2,291	3.9	13.0
Canada	2,458	640	3,146	1,851	2.5	11.2
Argentina	333	613	507	1,773	[7]5.4	14.2
India	na	482	na	1,501	na	12.1
Mexico	774	250	1,638	1,049	[8]11.3	22.7
Greece	671	160	1,842	1,041	10.6	20.6
Switzerland	268	304	207	886	−2.6	11.3
Turkey	676	184	732	856	[6].9	18.6
Singapore	697	180	1,105	817	4.7	16.3
Thailand	1,573	90	6,789	801	20.1	31.4
Taiwan	na	224	na	651	na	16.5
Japan	320	172	442	608	3.3	13.5
Total for above[5]	[9]33,230	[9]12,345	[9]67,100	[9]57,222	[9]7.3	16.5

na = not available

[1] Volumes are in metric tons or equivalent; for selected commodities, however, no volume data are available. [2] Values are those reported by exporters to the United Nations. [3] Calendar year 1980 data except for Brazil (1979), Turkey (1979), Argentina (1978), Thailand (1978), India (1979), Mexico (1977), and Taiwan (1977). [4] Annual compound growth rates from 1970 to 1980, except where noted. [5] Excludes intra-EC trade. [6] 1970-79 growth rates. [7] 1970-78 growth rates. [8] 1970-77 growth rates. [9] Excludes Thailand for volume because data include cassava, a low-value unprocessed product.

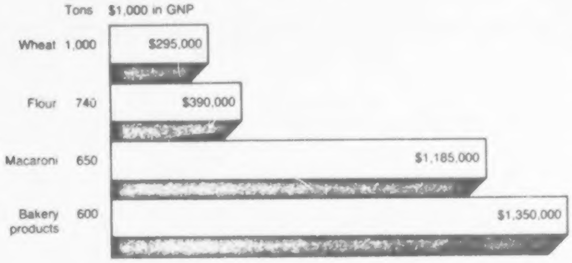
The concentration of U.S. exports in low-value, bulk products, such as grain, has held down our share of world agricultural trade and limited the contribution of exports to the American economy.

Figure 2. Exporting Processed Products Increases Employment[1]



[1]Based on employment required to export 1,000 tons of wheat, or its processed equivalent. 1980 data

Figure 3. Processed Products: Helping Boost the GNP[1]



[1]Based on GNP generated in exporting 1,000 tons of wheat, or its processed equivalent. 1980 data

the 1970's, but failed to keep up with the tripling and quadrupling in export prices enjoyed by other countries, particularly the HVP-oriented exporters like the EC. U.S. farm export prices fell from two-thirds of the world average in 1970 to less than half in 1980 (*table 2*). The dramatic slowdown in growth in LVP trade since 1981 has reinforced these volume and unit value trends. The average U.S. export unit value dropped from $270 per ton in 1980 to $230 in 1984, while world export unit values rose to $530.

These movements in U.S. and world export unit values reflected an added distinction between LVP and HVP trade—the relative importance of volume and unit price increases in export value growth. LVP trade volume increased 7-9 percent per year between 1970 and 1980, while unit prices rose 8-9 percent. HVP trade prices rose 10-14 percent annually, however, compared with volume gains averaging less than 6 percent. This difference in unit price movements is even more pronounced in real terms. Adjusting for the 1970's 9-percent annual inflation, the real price the United States received for its farm exports, particularly bulk commodities, declined by 1-2 percent per year, while real HVP prices increased 2-3 percent annually. Since 1980, LVP trade prices have fallen in current as well as real terms, further widening the imbalance between LVP volume-dominated growth and HVP price-dominated gains.

European Community Takes the Lead

The EC's strong growth in HVP exports pushed the Community's value share of the world market to almost half in 1980, compared with a third in 1970. Shipments in 1984 exceeded $60 billion. While two-thirds moved to countries within the Community, the EC's HVP sales elsewhere have grown faster. Its aggressive marketing program will probably keep the EC the largest and fastest growing exporter of HVP's in the 1980's. Exports to non-EC countries could make up half of the Community total by the early 1990's.

Part of the EC's success in expanding HVP exports reflects its large-scale use of export subsidies, often involving discounts of 10-50 percent. These subsidies work to displace sales of U.S. products in key markets in North Africa and the Middle East. The EC's success, however, also reflects the breadth and technical excellence of its food processing sectors. The food industry in the EC is highly developed and uses the latest processing technology, sophisticated management, and large-scale capital investment. The Community has also taken full advantage of the management and marketing services available from the multinational corporations that can draw on the best expertise available in the world.

The level of affluence and the sophistication and diversity of European tastes have also promoted production of a wide range of high-quality HVP's. A reputation for quality is clearly one of the EC's major selling points. Other factors also at play include traditional marketing ties, close proximity to markets, and aggressive salesmanship—all of which help the EC dominate in key European and Mediterranean markets.

The EC also continues to be the world's largest importer of HVP's. However, growth in its domestic food processing industries has outpaced growth in HVP demand within the EC. This should continue to improve the Community's trade position.

Table 2. Concentration in LVP's Dampens U.S. Share of World Agricultural Exports

Item	Unit	1961-71 average	1979-81 average	1984
U.S. share of world agricultural exports:				
By volume	Percent	20	39	33
By value	Percent	15	18	13
Agricultural export values:				
World average	Dollars	190	520	530
U.S. average	Dollars	125	260	230
Interannual variability[1]				
World trade volume	Percent	3	4	na
World trade value	Percent	5	8	na
U.S. trade volume	Percent	8	9	na
U.S. trade value	Percent	9	14	na

na = not available

[1] Percentages are measures of how likely market prices and quantities are to fluctuate from year to year. (Measured as the standard error of the regression from a time series analysis of data for the 1960's and 1970's.)

Sources: Food and Agriculture Organization Trade Yearbooks, 1975-81 issues; Foreign Agricultural Trade of the United States, ERS, U.S. Dept. of Agriculture; and ERS estimates.

U.S. Opportunities Through the 1990's

Most of the factors that encouraged expansion in HVP trade in the 1970's appear likely to reemerge by the late 1980's. However, growth in HVP import demand is unlikely to return to the 14-percent rate of the last 15 years. But even with slower growth, increases in HVP trade could average $15 billion annually in the 1990's and far outdistance growth in LVP's (*figure 4*).

Given the likely increase in trade in semiprocessed products such as animal feeds, the United States should continue to supply at least 10 percent of the HVP market. For a larger share of the market, however, the United States will have to adopt a more aggressive HVP marketing strategy and work to liberalize trade in HVP's.

A more aggressive U.S. marketing program for HVP's could start with efforts to broaden the focus of existing farm export programs and the development of new ones keyed to the unique characteristics of the HVP market. For example, funding for the export promotion program, the Food for Peace program (P.L. 480), the Commodity Credit Corporation's (CCC) export credit program, and USDA's foreign agricultural information system would have to be directed toward both HVP's and LVP's.

Efforts to broaden the focus of these programs are already underway. These programs have been used successfully to expand U.S. exports of bulk products

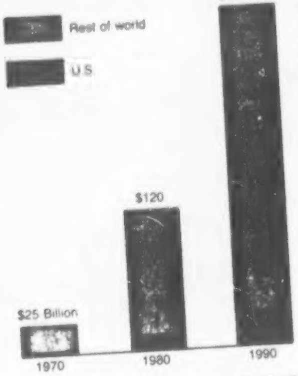
Fresh fruits and vegetables make up roughly a sixth of world trade in high-value farm products. The United States may need to work harder if it is to capture a significant share of this and other HVP markets.

such as grains and oilseeds over the last two decades. However, substantially more funding would be needed to maintain the U.S. competitive edge in the LVP market while making headway in the HVP market.

Modifications in these programs are also needed to enhance the effectiveness of the market intelligence collected and disseminated among HVP interests in the United States. Many U.S. traders have not fully recognized the similarity between HVP demand patterns here and abroad and the opportunities these offer for sales abroad.

Encouraging expanded use of HVP trading companies might also help U.S. producers capture more of the world market. The Japanese, and more recently the Brazilians, have successfully used national marketing and trading companies. Their knowledge of foreign demand, supply, and the mechanics of trade enable companies to expand exports considerably. The world HVP market is sufficiently complex to make the payoff on this more sophisticated approach to trade significant.

Figure 4. Prospects for HVP's: Slower Growth But Still the Leading Trade Sector



Any large improvement in the U.S. export position won through more aggressive marketing, however, could be quickly offset with a relatively small increase in HVP subsidies by other exporters. Hence, U.S. marketing efforts will have to be reinforced with trade policy initiatives aimed at limiting, or possibly reversing, the use of questionable trade practices by the other exporters.

The policies likely to be most successful in protecting HVP gains by the United States stop short of a costly trade war, but they would make the financial and political cost of unfair HVP trade practices unacceptably high. The United States could initiate selective export subsidies for products and markets where the cost of a subsidy would be small but where its impact on the other exporters would be significant. This suggests that initiatives in the dairy and poultry markets, for example, would be more cost effective than initiatives in the animal feeds or flour markets.

A concerted U.S. effort could also include initiatives under the Trade Agreements Act of 1979 and grievances under the General Agreement on Tariffs and Trade and its Code on Subsidies. It could also include pressure to liberalize trade policy in whatever other multilateral or bilateral forums were available. In the long run, emphasis on negotiations, rather than confrontation, promises to be more effective in winning increased U.S. access to HVP import markets and better cooperation with other HVP exporters. □

III. RESOLVED: THAT THE FEDERAL GOVERNMENT SHOULD GUARANTEE AN ANNUAL CASH INCOME TO FARMERS IN THE UNITED STATES.

ALTERNATIVES TO CURRENT COMMODITY PROGRAMS[*]

(By Lyle P. Schertz and Kenneth C. Clayton[†])

ABSTRACT

There are pressures which may lead to changes in U.S. farm programs. Alternatives include, but are not limited to options, revenue insurance, and sector income supports with tax credits. The three approaches are complementary in that options would facilitate development of revenue insurance programs involving the private sector. Initiation of options and of revenue insurance would not preclude an income support program focused on the sector as a whole. The particular approach to income support identified could involve tax credits tied to value of farm product marketings; however, benefits could be distributed by many other criteria.

Keywords: Commodity policies, commodity options, revenue insurance, tax credits.

SUMMARY

Pressures to change commodity programs are likely to increase because of continued instability of farm incomes and prices, inconsistencies between programs and increased exports, and concentration of resources, incomes and program benefits. Major alternatives include, but are not limited to:

Private sector trading of options to buy and sell commodity futures contracts.

Revenue insurance to cover losses from adverse commodity prices and low yields.

Tax credits to support net income of the farm sector.

Trading of agricultural commodity options on a trial basis will likely start in the fall of 1984. These market options will differ importantly from the current price support programs. Price supports involve "put" arrangements. They are provided free to producers. In contrast, premiums for "puts" and "calls" would be involved with option markets. Also, price supports are administratively and politically selected. In contrast, premiums for options would relate directly to market conditions. Options are not a substitute for programs that restrain supply or expand demand. However, they may

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be a substitute for features of current Government programs that transfer risks from producers to taxpayers and consumers.

Implementation of a system of farm revenue insurance for individual producers will be hindered by difficulties involved in the specification of actuarial standards for prices. These difficulties arise because of the uniqueness at any point in time of the expected value of the probability distributions of future prices, the influence of institutions on the shape of these probability distributions, and the lack of independence of price losses among those insured. Options could complement the commercialization of revenue insurance in that purchases of put contracts by an insuror would transfer price risk to writers of put contracts. However, as with options, revenue insurance is not a substitute for programs restraining supply or expanding demand. They may substitute for features of current programs that transfer risk from producers to taxpayers and consumers.

A farm income support program using tax credits as outlined, would assure producers as a whole a certain level of net farm income. However, it would not assure net income levels of individuals. Two major administrative tasks would be involved in the implementation of such a program.

> Determination annually of an income payment pool based on the assured level of sector net income and the net income realized by the sector from markets, and
>
> Determination of tax credit per dollar of marketings that Federal income tax filers would apply to their value of marketings in preparing their individual income tax returns.

With such a program, market prices would freely adjust and markets would clear. Producers would have incentives to take into account changing relative market demands and changing relative production costs. Producer returns would be greater than without any programs to transfer income. However, they may not be greater than with present programs.

It is important to note that effects of the program would be closely related to how the pool is distributed. It need not be distributed according to marketings; thus income redistributions inversely related to farm size or some other criterion could be applied.

Opposition to such a program would likely arise for several reasons including loss of subsidies currently targeted to specific commodities and fear of increased production of commodities not currently subsidized.

INTRODUCTION

Commodity programs such as price supports, deficiency payments, and restrictions of supplies have been pursued in various forms for the past half century. Even so, there remains anxiety over the welfare of the farm sector. And, there is uncertainty about whether these programs are effective in attaining policy objectives related to price risk and income. In spite of large Government expenditures and programs that cause consumer prices to be above free market levels, farm product prices in many markets and farm income continue to be unstable. Many argue that the level of farm income is inadequate. In addition, the commodity programs have, in some instances, undercut other farm oriented goals such as increased U.S. farm exports. Thus, it is logical to ask, what are some major alternatives to the current commodity programs that support farm income?

This paper briefly reviews present commodity policies and the pressures to find alternatives to current programs. It then, as requested by the meeting organizers, focuses on the principal features and implications of three major alternatives—commodity options involving put and call contracts, revenue insurance, and sector income support with tax credits.

CURRENT POLICIES AND PROGRAMS

The rationale for farm programs encompasses risk as well as equity concerns. Instabilities of farm production and, in turn, prices associated with weather changes create risks for producers. Resource use in such circumstances is less efficient than it would be under stable conditions. In addition, comparisons between the incomes of people in the farm sector and nonfarm people have been used to argue that a substantial portion of farmers were disadvantaged. These conditions, in turn, have been important justifications for the public's sharing of the production and price risks inherent in farming and for transfers of income to farmers and ranchers from the nonfarm sector. The resulting farm programs have focused primarily on commodities. They have involved:

Support of market prices through Government loans and purchases with additional support of income with deficiency payments;

Restriction of production and marketings; and

Expansion of quantities demanded domestically and internationally.

The Government supports market prices through loans to producers and through purchases of commodities by the Government. The loans are made by the Government to producers, to their associations, or, in the case of sugar, to processors. The amount of the loan is based on announced price support levels. The loan recipient may repay it and the accrued interest at any time or may forfeit the related commodities in satisfaction of the loan and interest. Government purchases support dairy product prices.

Crop production is restrained through programs that reduce planted acreages. Present crop programs give individual producers a choice between:

Complying with applicable acreage restrictions to be eligible for related loans, deficiency payments and special payments such as with the current payment-in-kind program; or

Not complying and, thereby, foregoing Government payments and eligibility for related direct benefits.[1]

Deficiency or direct payments are income transfers based on the difference between an announced target price for the respective commodity and its market price or the loan rate, whichever is greater.

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[1] It should be noted that to the extent Government programs have a positive influence on price, nonparticipants enjoy that benefit along with participants.

Some programs require producers to restrict acreage and marketings. Such a program is in effect for extra long staple cotton and most tobacco. In addition, some market orders restrict the quality and timing of marketing of certain products. Other marketing orders discriminate among markets, restricting the amount of production that can be sold in markets having more price inelastic demands with the remainder being sold in markets with more price elastic demands.

Some programs, like the food stamp program, have also been used to expand the demand for food. "Qualifying" people receive food stamps in amounts based on family income and size. These stamps can be used to buy food from regular commercial outlets. In addition, such commodities as beef, turkey, potatoes, and various fruits and vegetables are purchased by the Government and donated to schools, special programs for the elderly, and other recipients.

Demand is also expanded through export promotion with Public Law 480 and special credit arrangements. The Public Law 480 programs permit discrimination by price and "other contract provisions" among Government agencies of other countries which import U.S. commodities under these programs. Special credit arrangements permit lowering the economic costs to the importing country without adjusting "prices." The recently initiated blended credit program involves a combination of direct Government credits and guarantees of commercial credit.

In combination, these programs involve the socialization of the risks of farm product price declines below announced levels. Transfers of income from others in society to producers and owners of farm related resources are made in two ways—Government payments to producers and increased market prices—as a result of Government programs which restrict supplies and expand demand.

PRESSURES TO EXPLORE ALTERNATIVES

Several developments give rise to pressures to examine current commodity programs. These include:

Continued instability of farm prices and farm incomes;

Possible inconsistency of some programs with the achievement of increased exports; and

The maturation of the U.S. farm sector.

Prices in many commodity markets continue to be unstable. Farm corn prices in the past 3 years, 1980, 1981, and 1982, have been as high as $3.25 and as low as $1.98. Comparable prices for wheat are $4.16 and $3.22; for hogs $61.30 and $28, and for cotton $0.809 and $0.491. Milk prices have been much more stable, largely because stability has been achieved through the accumulation of huge Government stocks of dairy products. Farm sector net income has also been unstable reaching $32.3 billion in 1979, but dropping to $20.1 billion in 1980.

During the decade of the seventies, exports became a major outlet for U.S. commodities. Whether U.S. commodity programs have hindered or enhanced U.S. farm exports in the long run is a matter of considerable interest. For example, the availability of U.S. stocks has encouraged some importers, such as the U.S.S.R., to buy U.S. commodities. The availability of stocks has probably also discouraged some governments from stimulating production increases of their own agriculture.

In contrast, the support of U.S. commodity prices by loan programs may have meant higher export prices and less downward flexibility of prices in response to competition from other exporters and to increases in the value of the U.S. dollar. The net effect is uncertain.

The introduction of the deficiency payments concept was an important step in partially unlinking government income support from Government support of market prices. In general, however, greater downward flexibility of U.S. commodity prices would seem to be more consistent with our export promotion programs than are price support levels that do not take into account foreign competition and changes in the value of the dollar.

Other pressures to examine current commodity programs relate to the maturation of the sector. The characteristics of the farm sector are vastly different from those prevailing when most of the current commodity policies were initiated and developed. There are about 2.4 million farmers today, compared to 4 million in 1960 and 6.5 million in 1935. Production is highly concentrated in contrast to earlier condition. Less than 5 percent of U.S. farm establishments produce nearly one-half of U.S. farm production. In 1979 these establishments realized an average net farm income of nearly $113,000 and another $13,000 of nonfarm income.

The distribution of the direct and indirect commodity program benefits is consistent with the increased concentration of production. The major portion of the direct, as well as the indirect, benefits of commodity programs go to larger producers (Lin, and others). These producers had large wealth gains in the seventies and have larger incomes than those receiving smaller individual benefits from the programs.

A portion of the large producers, however, are particularly susceptible to price and production instability. They have high debt-asset ratios, generally because of highly leveraged expansion in the late seventies. Some smaller producers also have high debt-asset ratios, making them also susceptible to price and production instability.

It is unclear how the combination of wealth increases and the distribution of program benefits will, in the end, affect legislation.[2] Admittedly, these distributions seem inconsistent with the public's perception of farm programs and the justification expressed in most legislation for the programs. On the other hand, these distributions may be consistent with the intent of legislators and the short-term interests of strong supporters of the current programs.

Substantial costs of commodity programs and the severity of the national budget deficit are also providing an impetus for reexamining such programs. Current estimates are that Government outlays in fiscal year 1983 for commodity price and income support will be around $20 billion. This number does not reflect the value of commodities provided to producers under the payment-in-kind (PIK) program. Further, it is large when compared to estimated 1983 net farm income of $18 to $22 billion and estimated cash receipts of $134 to $138 billion. At the same time that anticipated Government outlays for commodity programs are large relative to those of the 1970's, the national budget deficit is extremely large. These fiscal conditions are the basis of intense pressures to reduce Government expenditures, including those related to agriculture.

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[2] See Pelzer and Skoloda for discussions of the possibilities that greater awareness of the relationships between farm programs and large-scale farmers will lead to reduced Government involvement.

Aside from their relevance to Government expenditures, the recent buildup in stocks also raises the question of whether the commodity programs are sufficiently flexible to take into account changes in export demands, and the cost structure of more efficient producers. This leads to other questions. For example, can export demand and probable U.S. production be anticipated early enough to enable reasonable adjustments of U.S. commodity programs? Even if the answer is technically yes, would the U.S. political process permit adjustments of programs to anticipated conditions? Similar questions arise about the ability to anticipate declines in production costs of the more efficient producers and to make appropriate adjustments in program provisions.

Thus, there is likely to be increasing pressure to change existing commodity programs because of: (1) Continued instability of incomes and prices; (2) the inconsistency between the programs and increased exports; and (3) concentration of resources and incomes within the farm sector. The high cost of farm programs at a time of large national deficits and a growing concern over the distribution of benefits to large and higher income farmers could significantly alter popular and political support for the programs. The process of change, if and when it occurs, could be dramatic or might well be limited to small adjustments in policies and program provisions. In either event, it is useful to consider major program alternatives. Such reviews can lead to a clearer understanding of the programs eventually implemented and a better appreciation of the issues. Three possible alternatives are discussed in this paper, not in any sense of advocacy but as one step toward an improved dialogue on future policy issues.

ALTERNATIVES

Three major alternatives to current commodity-oriented programs are:

Private sector trading of "options" to buy and sell commodity futures contracts;

Revenue insurance to cover losses from adverse commodity prices and low yields; and

Tax credits to support sector net income.

The first two alternatives would reduce (relative to free market conditions) the variance of incomes of individuals who produce and market the products for which options were traded and for which insurance was available. They would not cause incomes to be different from what would otherwise be realized except as transfers of risk permitted greater efficiency of resource use or unless special subsidy features were included. None of the three alternatives would directly manipulate individual commodity prices as present commodity programs do. The third alternative would utilize a system of tax credits to support the income of the sector. Because the amount of support would not be tied to specific prices or commodities, farmers would have incentives to seek the most profitable mix of production.

The "current political acceptance" of the three alternatives contrasts sharply. Trading of options on a trial basis will likely start in the fall of 1984. Revenue insurance has been recently examined by a task force mandated by the 1981 Agriculture and Food Act. Sector income supports have not been included in the national policy dialog.

The inclusion of the three alternatives gives focus to the issue of how Government programs relate to farmers' risks. Further, their inclusion allows scrutiny of how "concerns" about risks and pressures for transfers of income from society to particular commodity groups are related. For example, commodity options represent a major approach to transferring risks from producers to others. However, their consideration brings immediate attention to whether their exercise prices would be below prices consistent with current support programs and if transactions by producers would be subsidized by society. The "Who will pay?" question is related also to the revenue insurance alternative.

The sector income support alternative would involve explicit consideration of the appropriate level of income for the farm sector. Discussion of the implications of this alternative point to issues related to income distribution among producers, how programs tend to protect certain producers more than other producers, and how producers not directly affected by Government programs may be indirectly affected by current programs.

OPTIONS

Definitions

In 1983 the Commodity Futures Trading Commission authorized trading of agricultural commodity options on a pilot basis. Legislative prohibitions imposed on such trading in 1936 were removed in 1982. Government officials and academicians argue that the trading of put and call options could be an effective means for transferring risks from producers to others in the private sector (Lesher, Gardner). The cost for accomplishing this transfer could be borne entirely by producers, by the public, or could be shared.

Several terms have particular meaning for option markets:

Put option. A contract that conveys the right (but not the duty) to *sell* a particular commodity futures at a particular price until a stated expiration date.[3]

Call option. A contract that conveys the right (but not the duty) to *buy* a particular commodity futures contract at a particular price until a stated expiration date.

Options seller/writer. An individual who sells the option to the buyer and therefore assumes the opposite side of transactions if buyers of the options choose to exercise them. For example, if a buyer of a put option for December corn futures at $3 a bushel decided to sell corn futures at $3 a bushel, the writer of the put option would be obligated to buy the December corn futures at $3 a bushel from the holder of the put option without regard to the price of December corn futures at that time. And, if a buyer of a call option for December corn futures at $2.50 a bushel decided to exercise the option, the writer of the call option would be obligated to sell the December corn futures to the holder of the call option at $2.50 without regard to the price of December corn futures at that time.

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[3] This discussion focuses on options on futures contracts. Options could also be in terms of the actual commodities. The principles would be the same- However, the administrative approach would differ.

Exercise price. The price at which the buyer of a put option can sell the commodity futures contract and, in the case of a call option, the price at which the buyer of a call option can buy the commodity futures contract.

Premium. The transaction price for the options contract (the amount the buyer pays and the writer receives for an options contract).

The possible use of options markets can be illustrated with two examples. First, imagine a corn producer who anticipates in April that his production will be 10,000 bushels of corn and that he will harvest it in October. Suppose further, that the current cash corn price is $2.50 per bushel, that the price for forward contract October delivery is $2.25, and that a December futures corn put option has an exercise price of $2.25 and a premium of $0.20 a bushel. These conditions implicitly say two things: (a) some people are willing to pay $0.20 for the right to sell December futures at $2.25, and (b) some others are willing to write this option for $0.20 and undertake the repsonsibility to buy December corn futures at $2.25, if buyers of the put options decide to exercise their option.

The imagined producer could forward contract, but then would have to forego the opportunity to sell corn above $2.25. Further, there is some risk as to whether the producer would have 10,000 bushels to sell. In turn, the producer might be willing to pay $2,000 ($0.20 times 10,000) for the right to sell the 10,000 bushels at $2.25. In so doing, the risk (on 10,000 bushels) of prices going below $2.25 is transferred in exchange for $2,000; the opportunity to realize gains from prices going above $2.25 is retained and the obligation to deliver 10,000 bushels as with the forward contract is avoided.[4]

Second, imagine a cattle feeder in April anticipating the need for 10,000 bushels of corn in October. Assume market prices as above and a premium for a $2.25 December futures corn call options of $0.20 a bushel. The feeder could forward contract, but then would have to forego the opportunity to buy the corn below $2.25. In turn, the feeder may be willing to pay $2,000 for the right (but not the duty) to buy the 10,000 bushels at $2.25 per bushel.

Price supports—A put

The current commodity price support program is a "put" arrangement as Gardner indicates. However, two featues of the price support program are sharply different from a set of market options. First, the "put options" provided by the Government do not involve the payment of premiums by producers. But conditions are required in some cases such as diversion of acreage or the Government holding a modified "call" option at higher prices in the form of the release price on the stock in the farmer-owned reserve. Further, the price support levels are administratively and politically selected. They may or may not reflect market forces that would influence the exercise prices in option markets. In addition, farmers' use of the free "put" options under the current loan programs is most likely greater than if they had to pay for them.

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[4] We assume a constant difference between cash prices and prices of futures contracts in order to simplify the discussion.

In times of Government stock accumulation, price support levels probably have been greater than market determined option exercise prices would likely have been. Obviously, the market system could set exercise prices equivalent to levels comparable to current support prices. However, premiums for such options would reflect the difference between expected market prices consistent with anticipated market supply and demand conditions and the exercise prices incorporated in the options contracts.

Compatibility with other programs

Questions arise with any institutional change concerning its compatibility with present institutions. Thus it is appropriate to ask, would trading in farm commodity options be compatible with current price support programs and with transfers from the public to individual producers such as deficiency payments?

Premiums on option contracts would reflect a variety of institutional arrangements. The combination of exercise prices and premiums with the Government facilitating the withholding of 50 million acres from production would be different from the combination of exercise prices and premiums if the Government was not involved in such activities. The availability of price supports would influence the probability distributions of prices, alternatives available to producers, and therefore, the combination of exercise prices and premiums in the options markets.

The volume of trading in options may also be influenced by Government programs. For example, producers' interest in buying say, puts, would be influenced by the availability and level of price supports, as would the interest of potential writers of puts. The volume of futures trading declined significantly in the fifties and sixties as large Government stocks reduced price fluctuations.

The mixing of Government activities with options has the danger of stifling the viability of options trading. Option markets require participation of speculators. They are particularly wary of markets in which prices can be significantly influenced by administrative and political decisions of governments.

Implications

The hypothesis is that the availability of options markets would not cause commodity prices and therefore related farm income to differ significantly from prices and farm income levels prevailing without such a market. Under these conditions, options would not substitute for programs restraining supply or expanding demand. Options may, however, substitute for programs transferring risks from producers. The Government, for example, could accept bids from speculators to write put contracts at exercise prices consistent with previous price support levels. Ownership of these put contracts could, in turn, be distributed to producers who qualify according to specified criteria. This practice with public assent could continue as a substitute for the present price support program.

Alternatively, the public could decide to provide a specified subsidy to each producer who purchased put options. The subsidy may be less than, equal to, or greater than the premiums paid. However, the subsidy could be increased or decreased over time and, thereby, be used to compensate producers for price risk and to subsidize income levels. Transfers from Government to producers need not be tied to the use of options.

Options may be more attractive to producers than futures because of the "known" nature of the transaction and the cost associated with it. As stated above, the purchase of an option provides a very specific right to the purchaser and for a price which is fixed at the time of the transaction. In contrast, with futures contracts price changes can lead to margin calls even if combined price movements of the cash commodity and the futures position do not result in financial losses. Margin calls are inconvenient and disliked.

At the same time it is important not to expect too much from options markets. Paul argued, in commenting on Gardner's AJAE paper on options, that conceptually the "strategic use of futures" could accomplish producer objectives as well as the use of options could accomplish them. However, farmers have not used futures in the ways to which Paul refers. Also, insurance companies have not developed price insurance programs based on such techniques. Would their response be different when options are traded?

In summary, option markets could facilitate transfer of risks from producers. However, they would not likely stabilize market prices. It is conceptually possible for the Government to tie income transfers to the use of option markets. If this were done, those most likely to use the option markets—the larger producers—would benefit most. Option markets, with or without associated income transfers, would not interfere with flexibility of prices in response to changes in export demands.

REVENUE INSURANCE

Schuh's presentation to an American Enterprise Institute symposium in 1980 is credited as the first formal proposal of a revenue (income) insurance approach for U.S. agriculture. He proposed a subsidized income insurance program whereby individual producers of crops could select a percentage of their individual normal yield and a price of the commodity for which they wish to be insured.

For Schuh, the transformation of U.S. agriculture was nearly completed. Impressed with the balance between commodity demands and supplies in the seventies, he argued that: "The secular income problem arising from excess labor in agriculture is essentially behind us." (p. 14.) However, he anticipated a ". . . severe problem of income instability, and a problem of rural poverty associated with disadvantaged families and regional stagnation." The proposal for insurance related to the first of these conditions.

Crop insurance

The present crop insurance program has some features consistent with an income insurance approach. Other features are not consistent. Crop insurance is essentially for yield losses below selected percentages of the yield history for the individual producer. Premiums are, in turn, linked to the percentage of yield protection desired and the price selected by the producer.

Suppose a corn producer picks $2.50 a bushel and the insurance policy calls for protection against shortfalls of yields below 90 bushels per acre. With an actual yield of 70 bushels, the payment would be $50 per acre (20 bushels times $2.50) regardless of the market price for corn. In contrast, the producer would receive no payment if the yield was 90 bushels or more even if the price was below $2.50. Thus, while the Federal Crop Insurance Corporation uses commodity prices, there is no insurance of the price unless the yield falls below the insured level. And, then the price protection applies only to that portion of the crop represented by the difference between the insured level and the yield.

Possible insurance approaches

There are several ways to construct a revenue insurance program. For example, programs could be in terms of insurance against:

Loss of yield at designated/selected prices as is done with the current FCIC program;

Price shortfalls for designated/selected yields; and

Shortfalls of value of production (price times production).

We presume that Schuh's ideas relate to the third of these concepts and the "farm income protection insurance" study called for in the Agriculture and Food Act of 1981 relates to this concept as well. It is, however, useful to first focus on the second concept—insurance against price shortfalls for designated/selected yields.

This is because development of actuarial data for prices as distinct from actuarial data for yields, is particularly difficult.

Price probability distributions

Probability distributions for commodity prices are substantially different from probability distributions for yields. For example, probability distributions for future yields are applicable to specific geographic areas and specific crops. These distributions are sufficiently stable over time so that commercial insurance firms have translated them into actuarial standards applicable to individual crops grown by individual producers on particular parcels of land. These standards can, in turn, be used as a basis for specifying insurance premiums for selected levels of production and related payouts.

The Federal Crop Insurance Corporation (FCIC) is not always able to establish historical yield distributions for particular land parcels. When such data are not available, FCIC uses recent yield data for the parcel and the variance of county wide data to establish a distribution of historical yields for the particular parcel.

In contrast, the expected values of the probability distributions of a particular commodity price in the future are unique at any specific point of time. Also, the "shape" of the probability distribution may also vary from one time to another because of institutions. These characteristics would likely lead private insurance companies to either:

> Avoid becoming involved with a scheme that involves transfers of price risks from producers to insurance companies; or
>
> Operate a quasi-dealer-options market as contrasted to the traditional insurance approach based on actuarial standards.

An insurance program against price short falls for selected yields might operate as follows: Suppose the current market price for corn is $3 per bushel. Further, assume that producer A wishes to have insurance that the price for 20,000 bushels of grain, will be at least $2.50 per bushel. In responding positively to such a producer, the insuror writes an unofficial put which grants the producer the right to sell 20,000 bushels at $2.50 in December. The premium charged to the producer would depend on the exercise price, $2.50 in this case, and the insuror's perceived probability distribution of prices in December. The premiums will be small if the insuror is convinced that the probability of prices being above $2.50 in December are very high. On the other hand, if the insuror assesses probability of prices being below $2.50 to be very high, the premium will be larger.

An important question implicit to approaches involving individuals taking positions relative to prospective price changes arises:

Do prices behave consistent with the random walk theory? This theory holds:

> That the price of a commodity at a future point in time is equal to the current price plus applicable carrying charges between now and that time, plus random changes of price;
>
> That the variance of the price changes in the future is constant over time and predictable from historic price changes; and
>
> Therefore, the expected price for a future point of time is the current price plus anticipated carrying charges.[5]

In contrast to this theory, individual forecasters of commodity prices regularly anticipate that prices in the future will in fact be different than today's prices by more than the related carrying charges.

Institutions

Various institutions and institutional decisions alter the probability distributions of prices in futures markets. Recognizing this situation Plato argues that futures markets and nonrecourse loans are incompatible in that they are alternative means for producers to protect against price declines. Price supports obviously influence the possible effects of random events. Loan levels and related program provisions also affect the behavior of prices. Further, random events may lead to expected actions. For example, is there a feedback effect of low prices (if they occur) on policy decisions in Washington? Administrative events may also lead to policy changes. Would the purchase of 60 million tons of wheat in the U.S. market by another country lead to U.S. Government action that mitigated the price effects of the purchase?

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[5] See Gordon for a description of the random walk theory.

Independence of losses

Aside from the ability to anticipate the probability distribution of prices, potential insurers of prices must deal with the extent of independence of losses among those insured. For example, corn yields on a farm in Nebraska are probably independent of the corn yields of an Illinois farm. Thus, an insuror by writing crop insurance over a wide area can generally avoid risk of widespread losses. In contrast, if corn prices dropped below insured levels price insurance policywriters would likely incur losses over large market areas.

Options and revenue insurance compatibility

Lack of independence of realizable prices along with the unfamiliarity of personnel of typical insurance companies with commodity markets lead to the idea that there could be significant complementarities between options markets and a system of revenue insurance.

An active options market would be a vehicle for transferring risk. The purchase by the insuror of a put contract would transfer the price risk from the insuror to the writer of the put contract. Or, regulated private dealers might be permitted to write puts. An insuror could, in some cases, use the futures market to accomplish the same thing as in an options market.

The public could intervene in several ways through their Government. The Government could:

Insure private insurance companies against losses;

Offer subsidies to either the producers who take insurance, the firms that write the insurance, or the writers of put contracts in the options market; or

Assume the insuror's role.

Subsidies may or may not be involved in the latter approach. In an alternative approach, costs could be covered partially or entirely by premiums paid by producers. Income insurance would involve joint probability distributions of yields and prices. These bivariate distributions would presumably reflect the probability distribution of the yields of a specific crop on a parcel of land and the probability distribution of prices. However, changes in yields on an individual parcel and prices are not necessarily independent. For a specific parcel and a specific crop they may be. The challenge for an insuror would be to identify which parcels and related crop yield changes are randomly independent of price changes and which are not.

Institutions and administrative arrangements associated with options markets and with a system of revenue insurance would differ. Even so, several effects of a revenue insurance program, if operated without subsidies, would be similar to those of an options market. Costs and benefits associated with risk would be internalized. The markets would operate efficiently in communicating changes in supply and demand, as would the markets for transferring risk. Individual producers would presumably equate the benefits of transferring risk to the cost for achieving this transfer. Product and factor mixes would reflect these benefits and costs. Related efficiencies, however, could be eroded if Government programs subsidized the activities.

In summary, developing a system of revenue insurance for individual producers involves difficulties in developing actuarial standards for prices. These difficulties arise because of the uniqueness at any point in time of the expected value of the probability distributions of future prices, the influence of institutions on the shape of these probability distributions, and the lack of independence of price losses among those insured. Options could complement the commercialization of revenue insurance in that purchases of put contracts by an insuror would transfer price risk to writers of put contracts. However, like options, revenue insurance is not a substitute for programs restraining supply or expanding demand. They may substitute for features of current programs that transfer risk from producers to taxpayers and consumers.

TAX CREDIT SECTOR INCOME SUPPORT PROGRAM

A third major policy alternative reflects elements of current policy and past proposals such as deficiency payments.[6] The U.S. Government would assure producers as a whole a level of net farm income. However, the farm related net income levels of individuals would not be assured directly. Prices in markets would be free to adjust. Quantities consumed, exported, and stored would reflect market prices and tax credits associated with the program.

Administrative tasks

With the tax credit sector income support program (TCSISP) two major administrative tasks would be involved. The first would be to determine annually an income payment pool based on an assured level of sector net income and the net income realized by the farm sector from markets. For example, legislation might state: "The U.S. Government will transfer funds (to producers) under this tax credit sector income support program (TCSISP) so that net farm income associated with production and sale of all commodities plus the tax credits associated with this program equals at least $20 billion." Accordingly, an "income payment pool", would be calculated. This pool would equal the difference between: (1) U.S. net farm income realized from the market and influenced by other Government programs such as agricultural conservation payments, and (2) the "assured level" of net farm income, $20 billion in this example.

The second step would be to determine a tax credit per dollar of marketings that Federal income tax filers would apply to their value of farm marketings in preparing their individual income tax returns. Thus, a very specific approach for distributing the income payment pool is included: distribute the income payment pool proportionally to the value of marketings of farm commodities through the use of Federal income tax credits. Implicit to this proposal is the notion that tax filers could realize these credits even though their tax obligations were less than the tax credits associated with the program.

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[6] These features are similar to those developed by Norton and Working, and Froker in the 1940's. The Canadian Western Grain Stabilization Program includes some features similar to those presented here as well.

In the interest of clarity, specific approaches to other analytical and administrative tasks are identified. In late December of each year, estimates for the current year would be made for the U.S. farm sector for:

Farm-related receipts including Government checks but excluding transfers pursuant to the TCSISP program;
Farm production costs; and
Net farm income.

Suppose that these numbers were

	Billions
Farm receipts	$160
Farm production costs	143
Net farm income	17

This information, along with an assumed guaranteed income level of $25 billion, would imply an $8 billion income payment pool.

The IRS Form 1040 would be revised to include the calculation of a farm income support tax credit.

The lines might read as follows:

39a—Enter eligible farm marketings from line .... of Schedule F. ....
39b—Tax credit per dollar of marketings announced by USDA and IRS on January 1, 19XX ....
39c—Multiply line 39a by 39b and enter the amount in the tax credit box of this form ....

The tax credit per dollar of farm marketings would be announced on January 1 for the previous calendar year. For the above example the credit would be $0.05. The amount that estimated net farm income of all producers was below the assured sector net farm income ($25 billion minus $17 billion) divided by estimated farm receipts ($160 billion). In turn, each individual's tax liability would reflect the calculated tax credit for farm income support. Using the above tax credit per dollar of farm sales, $0.05, there would be a tax credit of $5,000 for a Schedule F filer showing marketings of farm products of $100,000.

Graphical representation

Figures 1 to 6 illustrate some of the theoretical economic implications of the sector support approach outlined above. Figure 1 depicts conditions without commodity programs. For the sector, DD is demand at the farm level for U.S. agricultural production and is the summation of demands for export (D_xD_x) and for domestic use (D_dD_d). The area abcd depicts total market receipts. The demand for the individual farm is equal to price, P_o. The production of the individual farm influences price, but its effect is so small that the farmer does not perceive the effect.

Figure 1. Supply and demand

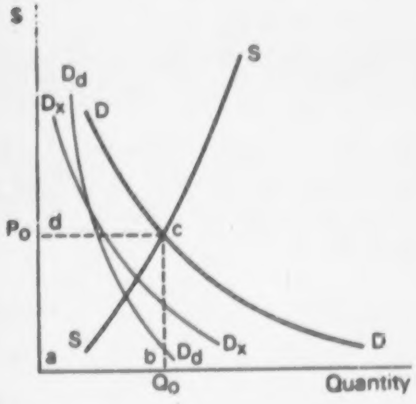

Figure 2. Production restrained and deficiency payments

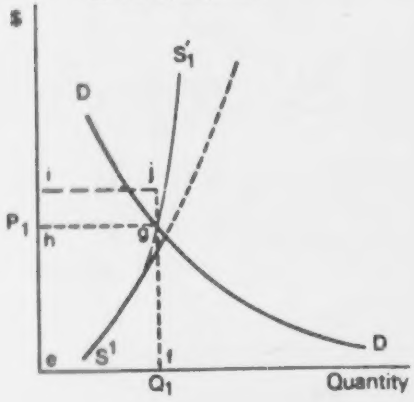

Figure 3. Sector total costs, revenue and net farm income

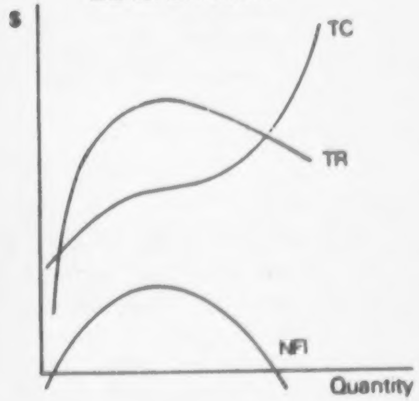

Figure 4. Net income (assured and actual) and income payment pool

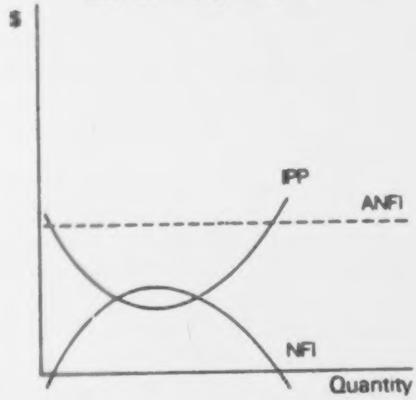

Figure 5. Tax credit per unit of product

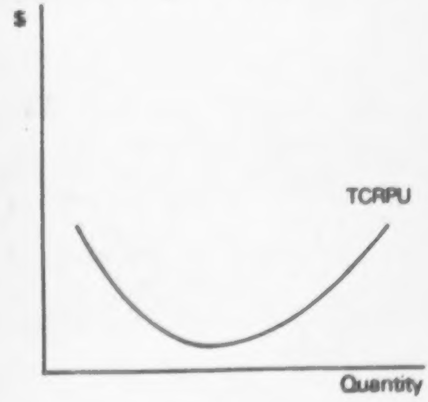

Figure 6. Supply and demand with tax credit income support program

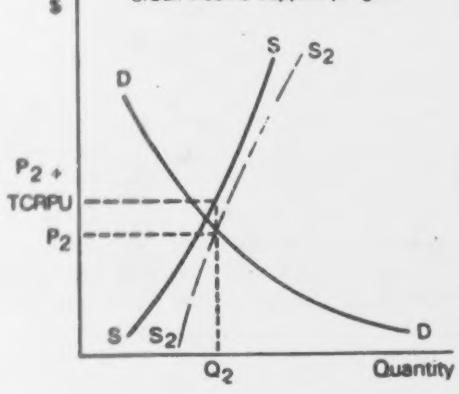

Figure 2 depicts conditions with supply control programs that restrict the use of resources for production of farm commodities as well as providing direct Government transfer payments. For the sector, economic incentives, Government payments, and Government restraints lead to $S_1S'_1$ being the effective supply and, therefore, Q_1 is produced. This quantity generates total market receipts of efgh and Government transfer payments of hgji.

A total sector revenue function (TR) consistent with the demand and a total sector cost function (TC) are depicted in figure 3, as is the net income function (NFI=TR–TC). The net-farm-income and an assured-net-farm-income (ANFI) functions are shown in figure 4. The difference between these two functions (ANFI–NFI) is the income payment pool (IPP). Thus, for each quantity there is a unique combination of total revenue, total cost, and income payment pool.

The IPP function divided by corresponding quantities equals the tax credit per unit of production (TCRPU). This TCRPU, in turn, is shown in figure 6 as shifting the sector supply function from SS to S_2S_2 as the tax credit offsets a portion of costs. Thus, Q_2 denotes the resulting equilibrium quantity produced and the market price, P_2.

This discussion assumes that costs of production (TC) are not influenced by per unit returns to production (in this case market prices and the tax credits). This, of course, may not be true. The availability of the tax credits may lead to a "bidding up" of factor and input prices. Consequently, spiral effects would likely involve higher total costs, lower net farm income estimates and therefore lead to larger tax credits (TCRPU) for any given level of assured net farm income (ANFI). Thus, we do not visualize that this approach escapes the classic problem of program benefits being bid into asset values and other production costs. The extent and process may differ from that observed with historic commodity programs such as acreage allotments and price supports. One reason for the possible difference is that individual commodity prices would not be supported with the program as outlined.

One possible way to dampen the spiral phenomena would be to exclude from net farm income calculations the costs for land and other durable factors or inputs with relatively inelastic supplies. Another would be to scale the availability of the tax credit inversely with the amount of farm sales.

Several relationships have important implications when considering the economics of this alternative. They include:

The level of the assured net farm income;

The price elasticity of product demand because of its relationship to changes in total revenue; and

The price elasticity of product supply because of its relationship to changes in total costs.

The higher the level of income assurance, the greater the incentive for production beyond that without the program. The more price elastic the sector demand and the more price elastic the sector supply the lower the Government income payment pool would be for any given level of assured net farm income.

It is likely that the greater the variability of demands, production costs, or actual production the greater would be the cost of the TCSISP since, as presented here, the program would not recoup any losses of previous years when net farm income exceeded the assured level.

The net income associated with equilibrium quantities and prices is a crucial consideration as are the instabilities of the actual quantities and, in turn, market prices. If the sector is roughly in equilibrium, as some suggested a few years ago, or, if demand shifts were to outpace supply shifts in the coming years, as some have also expected, the proportion of years in which substantial payments would be called for would be limited. On the other hand, if equilibrium quantities are substantially greater than those consistent with politically acceptable prices and politically acceptable net farm income, payments under a TCSISP-type program would be more frequent and could be quite large unless complemented with production restricting programs.

Estimated effects

Three situations were considered to estimate the effect of a program such as the one described above:

A base situation using a set of economic parameters and program conditions comparable to 1982;

A base situation assuming a free market with the same economic parameters as with the first simulation; and

A TCSISP simulation with the same economic parameters, but program conditions and farm costs consistent with the postulated income support approach.[7]

Assumed was a congressionally assured net farm income of $20 billion ($20.3 for ease of computation) for the TCISP simulations (table 1). As expected, net income under both the free market and TCSISP simulations was less than the $19.8 billion net income for the 1982 program simulation. For the TCSISP simulation, the $4.6 billion net income from the market implies that tax credits would be the equivalent of 12 percent of farm market receipts.

TABLE 1.—ESTIMATED U.S. FARM RECEIPTS, COSTS, AND NET INCOME, COMPARATIVE SIMULATIONS

[In billions of dollars]

Category	Simulations		
	1982 programs [1]	Free market [2]	Assumed TCSISP [3]
Receipts:			
Commodity	146.9	127.9	130.4
Other	19.1	19.1	19.1
Inventory change	−1.9	−3.1	−2.2
Production costs	144.3	139.6	142.7
Net income	19.8	4.3	4.5
Income payment pool			15.7
Combined net and income payment pool	19.8	4.3	20.3
Commodity program outlays	11.7		
Tax credit per dollar farm receipts			.12

[1] Base situation assuming a set of economic parameters and program conditions comparable to 1982.

[2] Free market situation with economic parameters the same as for the base situation.

[3] $20 billion guaranteed net farm income.

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[7] The FAPSIM model (Salathe, and others) was used to estimate the effects shown in tables 1 and 2.

Different assured income levels would lead to contrasting combinations of receipts and production costs and therefore different tax credits as indicated in table 2.

Implications

Implications of this approach relate to market efficiencies, ease of transition from present commodity programs and complementarities with these programs, effect on exports, and political acceptability.

Market efficiencies

Market prices would freely adjust to reflect production and marketing technologies and costs, market demands, and the expected distribution of the income payment pool. Effective per unit returns for producers would be product market prices plus the expected tax credit. However, the tax credit would be equal for each dollar of marketings. This would mitigate the distortions flowing from present programs which influence some product prices more than others. Each producer would have an incentive to adjust production to take into account changing relative market demands and changing relative production costs.

Returns to producers and other resources used in farm production could be greater than would be the case without any programs to transfer income to farm producers. Total returns with the assumed TSCISP program were about the same as under the current programs. Total tax dollar outlays (or tax receipts foregone) are also nearly equivalent.

TABLE 2.—SELECTED VARIABLES ASSOCIATED WITH SIMULATIONS OF ALTERNATIVE LEVELS OF ASSURED SECTOR INCOME

[In billions of dollars]

Variable	Income guarantee levels		
	$20 billion	$25 billion	$30 billion
Farm receipts:			
Commodity	$130.4	$131.2	$132.0
Other	19.1	19.1	19.1
Inventory change	−2.2	−1.9	−1.6
Production costs	142.7	143.6	144.6
Net	4.6	4.8	4.9
Income payment pool	15.7	21.0	26.4
Combined net and income payment pool	20.3	24.8	31.3
Tax credit per dollar farm receipts	.12	.16	.20

These comparisons of course, would vary with different assured income levels. The opportunity for farmers to more freely choose their commodities and the breader coverage across commodities differentiate the TCSISP approach.

The income support alternative, as outlined, calls for distribution of the income payment pool on the basis of market receipts. This need not be the procedure. The pool could be distributed equally to all who file a Schedule F, or to all who do not for that matter. The pool could be based on net profit from farming reported to IRS in contrast to market receipts. In the end, however, it does not appear possible to distribute program benefits in ways that reflect production, while also not filtering and perhaps altering the signals of markets that reflect consumer demands and producer supplies.

A number of variations on the payment pool approach could be incorporated as to commodity coverage. Tax credits could be given only to producers of certain highly desired products or producers particularly advantaged or disadvantaged. Limits or multipliers could be introduced to shrink or to increase calculated credits for taxpayers of certain characteristics. The more that the commodity lists are narrowed, however, the more that market signals will be distorted, the more likely that exports will be hampered, and the greater the inefficiencies that will remain in U.S. agricultural production.

It was not possible in this paper to give attention to refining the meaning of farm marketings. For example, the Schedule F takes into account "livestock and other items bought for resale." It would seem necessary to give close attention to this matter. With particular definitions of marketings a tax filer could qualify for tax credits by buying and selling farm products without transforming them in any significant way.

Ease of transition

Expenditure of Government money for a direct payments program would compete with expenditures for other commodity programs. The deficiency payments program for wheat, feed grain, rice, and cotton would be potentially duplicative if both programs exist. However, it would not be administratively necessary to discontinue any of the current Government programs that benefit producers before initiating a tax credit sector income support program. The benefits of the other programs could be taken into account in estimating sector receipts as is now done estimating net farm income.

Effect on exports

Present programs involve transfers to producers and higher market prices to U.S. consumers and to importers of U.S. farm products. The sector income support approach, assuming these other programs were discontinued, would allow prices to seek levels whereby production cleared the combined domestic and international markets. The effect on the volume of exports would be positive. It is not clear, however, if the effect on the total value of exports would be positive. This would depend on the mix of commodities exported and their respective export demand elasticities.

Political acceptability

The direct benefits of current programs are much greater for some commodity producing groups than for others. The more highly benefited commodity producers' groups could view a program of the type described in this section as a threat to their benefits.

Other commodity groups might oppose it as well, recognizing that current programs, in certain cases, discourage the shift of resources out of the commodities supported. Without supports focused on particular commodities, a portion of the related resources would go out of production altogether, but importantly, at least some of the displaced resources would shift to products not directly supported. Producers of these other products might therefore see such a program as eroding the indirect benefits they realize with current programs.

An income support program, in years in which net farm income from marketings was less than the assured level, would involve consumer prices lower than free market prices and lower than prices consistent with current commodity programs. Some political attention has been given in the past to rapid increases in market prices such as occurred in the 1970's. But, significant political benefit is not evident to us in a shift of a portion of food costs from the market to Government expenditures and with consequent higher taxes or a higher general price level. Thus, it is not clear that substantial consumer support would develop for a TCSISP type program.

Such a program could lead to (a) enhanced effectiveness of congressional budget procedures and (b) increased awareness and understanding of the competitiveness among producers of different farm products. For example, Congress might decide on a target for net farm income, decide on the maximum amount for a payment pool, and appropriate an amount consistent with the anticipated deficiency in net farm income. In turn, Congress might give considerable autonomy to congressional agricultural committees to take money from the pool for producers of selected commodities as conditions warranted. This could be accomplished by using the money for programs similar to present ones, or by giving some producers tax credits differently, say double, from what they would be if producing other commodities. Such an approach would enhance the awareness of producers that to give money to some preempts giving it to others. It would also encourage a greater recognition of spillover effects of particular commodity programs onto the economic conditions of other commodities.

In summary, a farm income support program using tax credits as outlined, would assure producers as a whole a certain level of net farm income. With such a program, market prices would freely adjust and markets would clear. Producers would have incentives to take into account changing relative market demands and changing relative production costs. Producer returns would be greater than without any programs to transfer income. However, they may not be greater than with present programs. It is important to note that effects of the program would be closely related to how the pool is distributed. It need not be distributed according to marketings; thus income redistributions inversely related to farm size or some other criterion could be applied. Opposition to such a program would likely arise for several reasons including loss of subsidies currently targeted to specific commodities and fear of increased production of commodities not currently subsidized.

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II. COMMODITY PROGRAM PERSPECTIVES

Commodity Price and Income Support Policies in Perspective

James A. Langley, Robert D. Reinsel, John A. Craven,
James A. Zellner, and Frederick J. Nelson*

ABSTRACT

This article examines the objectives, performance, effects, and interaction of nonrecourse loans, Government and farmer-owned stock management activities, and target prices and deficiency payments. Setting loan rates above market-clearing prices increases farm income more than would loan rates used solely for price stabilization. However, relatively high loan rates also increase Government stocks, reduce the quantity of domestic and export demand, and increase program costs and food prices. Using the farmer-owned reserve to support farm income has often led to large stock accumulation. Target prices are intended to separate income support from price stability objectives, but deficiency payments also compensate farmers for reducing acreage.

KEYWORDS: Agricultural policy, commodity programs, Commodity Credit Corporation, deficiency payments, farmer-owned reserve, nonrecourse loans, price and income stabilization, stocks, target price.

INTRODUCTION

This article examines crop price and income support programs that have been the core of Federal farm policy since the thirties. The stated purpose of U.S. farm policy legislation, most recently stated, has been: "To provide price and income protection for farmers, assure consumers an abundance of food and fiber at reasonable prices, continue food assistance to low-income households, and for other purposes" (39). Justification for Government intervention in the domestic agricultural sector includes perceptions that farmers are an economically hard-pressed group, a principal reason for this is their relatively disadvantaged position in the marketplace, and, in the absence of Government intervention, there would be intolerable instability in commodity markets, adversely affecting both farmers and consumers (11).

In part, farmers' perceived disadvantages compared with other participants in the economy stem from agriculture's organizational and biological characteristics. A large number of farms produce homogeneous commodities and each farm accounts

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for a very small part of total production. Production tends to be variable because of the weather, which causes wide swings in farm prices and income. In addition, continued technological advances in agriculture have resulted in fewer resources being needed to supply the market.

The Government has used an array of price and income support and stabilization programs to ease resource adjustments in the farm sector. These programs include nonrecourse loans and direct purchases of excess commodities, Government and farmer-owned stock management activities, acreage reduction and other supply control measures, and direct payments to farmers. The increasing exposure of farmers to fluctuations in the farm economy and in the world marketplace, as well as the long-term effects of the programs themselves, have raised fundamental questions:

- How well do price and income support programs serve their intended purposes?
- How have they affected resource use and values in agriculture?
- Has the profile of farming been altered by these programs, including the number and size of farms, their financial organization, or the crop mix of farm output?
- What are the costs and benefits of these tools to farmers, consumers, and taxpayers, and, how equitably are they distributed?

This paper explores the objectives, performance, impacts, and interaction of three price and income support programs: nonrecourse loans, Government and CCC stock management activities, and target prices and deficiency payments. Acreage reduction programs are addressed in a separate article in this report. The appendix describes the criteria used over the years to set levels of price and income support.

PRICE AND INCOME SUPPORT PROGRAM OPERATION

This section describes the evolution and operation of price and income support programs. Nonrecourse loans, stock programs, and target prices and deficiency payments are discussed.

Nonrecourse Loans

Nonrecourse loans were initially authorized by the Agricultural Adjustment Acts of 1933 and 1938 for corn, cotton, peanuts, rice, tobacco, and wheat. Commodity coverage has since been extended to include sorghum, barley, oats, rye, soybeans, and sugar. Current programs are carried out under authority of the Commodity Credit Corporation (CCC) Charter Act of 1948, the Agricultural Act of 1949, and the National Wool Act of 1954. The authorizing legislation has been substantially amended over the past 50 years through 12 major and numerous minor acts of Congress. The latest major revision was the Agricultural Programs Adjustment Act of 1984.

Under the nonrecourse loan program, eligible producers may obtain a loan at a specific rate per unit of the commodity by pledging crops in storage from the current year's production as collateral. These loans are called "nonrecourse" because the CCC has no alternative but to take title to the stored commodity as full payment for the loan if the farmer chooses not to repay the loan principal plus interest. Thus, CCC becomes a guaranteed source of demand for farm commodities. The loan may extend for 1 to 18 months depending on the commodity, but is typically for 9 months. 1/ Eligibility for the loan and other program benefits may require participation in any announced acreage reduction or other production control program.

Nonrecourse loans differ from commercial loans in several ways. The interest rate on CCC nonrecourse loans is usually below those offered by commercial banks. Farmers' credit ratings are unaffected by defaulting their collateral (the crop) to the CCC. And, the loan rate may at times be above the full market value of the collateral.

Nonrecourse loans effectively support prices through the option to forfeit. If market prices are above the loan rate plus interest charges during the regular nonrecourse loan period, the producer has an incentive to repay the loan and sell the crop in the open market. But, because program participants always have the option of forfeiting their crops to the CCC whenever market prices do not exceed the loan rate plus interest charges, the loan rate places a minimum (floor) under the price received by participating producers. If enough farmers participate in the program, the market price will tend to be maintained at or above the loan level. In such a case, the CCC loan program tends to benefit all producers, not just those participating in the program. Thus, nonparticipants become "free riders" who receive higher prices as a result of the actions of program participants. However, if participation is low, there may not be enough of the commodity eligible to enter CCC stocks as a result of nonrecourse loan defaults to maintain prices for everyone at or above the loan rate.

The nonrecourse loan also serves as a marketing tool, which allows farmers to obtain cash to satisfy immediate obligations to other creditors while retaining control of the commodity they produce. Rather than sell at depressed prices during the harvest season, the producer stores the commodity until later in the marketing year when prices are usually higher. This evens out marketings throughout the year. Some producers use the cash-flow and marketing-tool aspects of nonrecourse loans even when market prices are well above the loan rate.

Commodity Stock Management

The accumulation and dispersal of commodity stocks has long been an integral part of U.S. agricultural programs. Major objectives of U.S. stock management programs have been to assure adequate supplies of farm commodities and to reduce market price and income variability, whereas other programs, such as land retirement, acreage diversion, and target prices have been intended to provide income and price support. In practice, the stock management and loan programs have also frequently been used to meet the support objective, although this has often led to excess stock accumulation. U.S. stock management programs are commodity oriented--existing for wheat, corn, sorghum, barley, oats, rye, upland cotton, extra-long staple cotton, rice, soybeans, sugar, tobacco, peanuts, honey, and dairy products. In terms of the volume of stock activities, wheat, feed grains, rice, and cotton predominate (figs. 1-4). Present stock management

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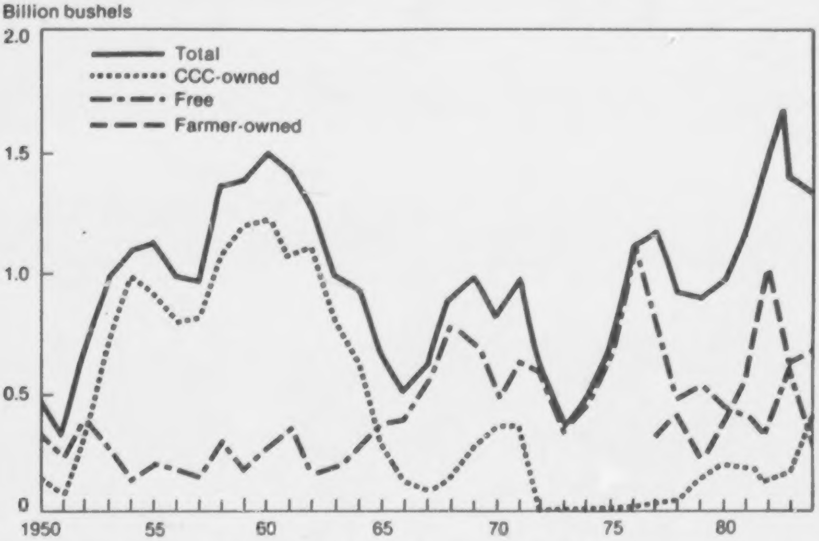
1/ The loan period for cotton is 10 months, with a possible 8-month extension if the average spot market price for SLM 1-1/16" upland cotton during the ninth month of the original contract does not exceed 130 percent of the average for that price for the preceding 36 months. All rice loans come due on April 30. Since a rice producer has until March 31 to take out a loan, it is possible to have only a 1-month loan for rice. The appendix describes the various criteria used to set nonrecourse loan rates since the thirties.

Figure 1

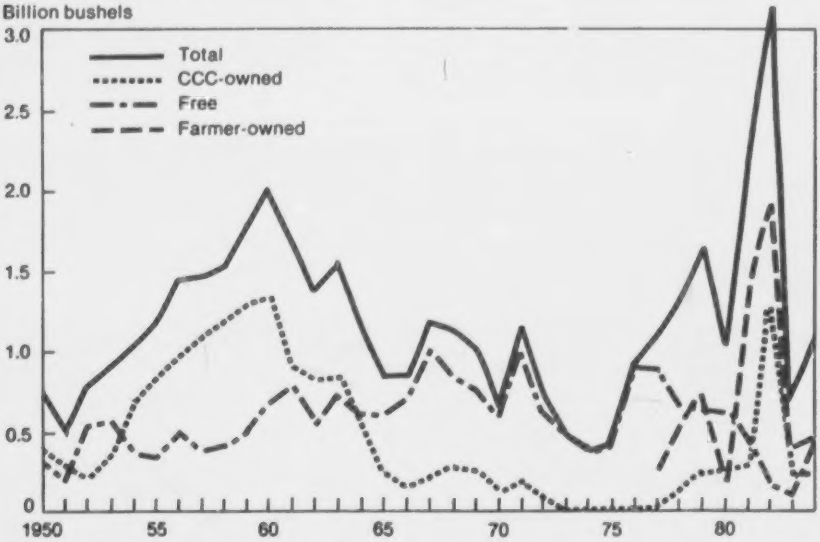
U.S. ending wheat stocks



"Free" stocks include commercial stocks and stocks held as collateral for CCC loans.

Figure 2

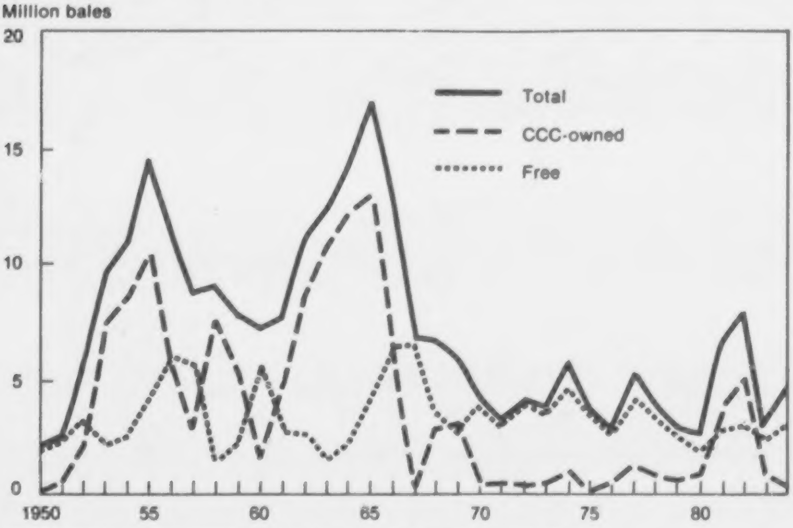
U.S. ending corn stocks



"Free" stocks include commercial stocks and stocks held as collateral for CCC loans.

Figure 3

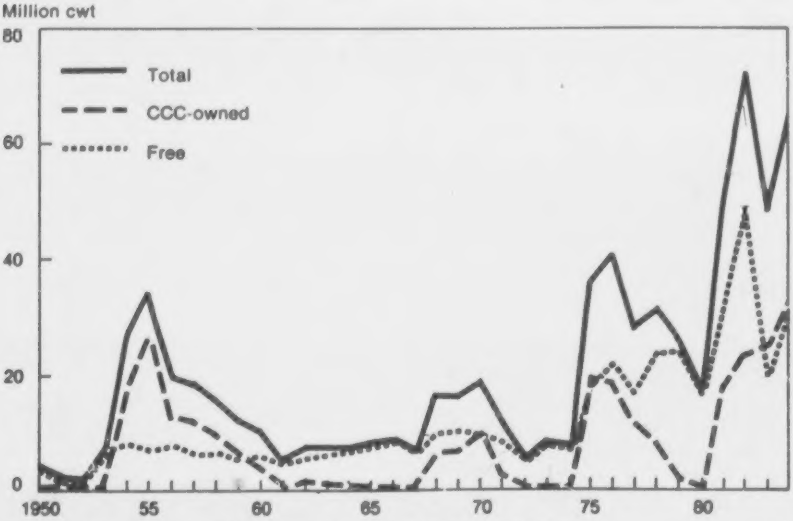
U.S. ending cotton stocks



"Free" stocks include commercial stocks and stocks held as collateral for CCC loans.

Figure 4

U.S. ending rice stocks



"Free" stocks include commercial stocks and stocks held as collateral for CCC loans.

programs include CCC stocks (both loans outstanding and CCC-owned) and farmer-owned reserve (FOR) stocks.

The CCC acquires stocks of grains, soybeans, and cotton as a direct consequence of its price support activities, either when producers default on nonrecourse loans or by direct purchases of program commodities. In the case of tobacco, peanuts, and honey, cooperative marketing associations handle certain phases of the price support programs with funds guaranteed by the CCC.

Prices of dairy products are supported by purchases of butter, Cheddar cheese, and nonfat dry milk from manufacturers and handlers. This, in turn, supports prices for milk and cream at the farm level. Domestic food and export donation programs are the most common outlets for surplus dairy stocks acquired under price support activities. CCC dairy stocks may be resold on the domestic market at 110 percent of the purchase price or the market price, whichever is higher.

There are several restrictions on the use of CCC-owned stocks. Legislation prohibits domestic "bargain sales" of CCC-owned commodities. The minimum domestic sales price of CCC-owned grain stocks was 115 percent of the current national average loan rate plus carrying charges for the 1974-77 crops, 150 percent of the loan rate for the 1978-80 crops, and, it is 110 percent of the FOR release price for the 1981-85 crops. However, under certain conditions, the CCC is authorized to donate, or sell at reduced prices, its excess commodity stocks on the domestic and international markets. 2/

Payment-in-kind (PIK) programs have also been used to reduce CCC stock levels and to limit further accumulation of stocks. Under most PIK programs, producers are paid for idling acreage with units of a particular commodity instead of cash. In 1961, farmers took approximately 25.2 million acres of corn and grain sorghum out of production in return for PIK certificates that could be converted to a cash payment from the CCC. The Congress renewed the PIK program for corn and grain sorghum in 1962 and kept it in effect until 1970; however, it was seldom used. The most recent example of payment-in-kind was in 1983, which was the largest acreage and stock reduction program in the Nation's history. Under an export PIK program initiated in 1956, exporters have occasionally been issued certificates redeemable in wheat from CCC stocks. Wheat thus obtained has been restricted to the export market.

CCC-owned inventory reductions also occur by donations of food commodities to needy individuals and institutions, or by making stocks available for use in relieving economically distressed or major disaster areas. The Secretary of Agriculture can sell CCC-owned feed stocks, at not less than 75 percent of the current loan rate, to eligible owners in areas where an emergency exists for foundation herds of cattle, sheep, and goats. Sale is authorized only to livestock producers who cannot obtain enough feed without undue financial hardship. Surplus dairy products are also available to the armed forces at no charge except for the cost of packaging.

In the early seventies, pressure arose to create a means of stock management more oriented towards stability than the CCC program. Regular CCC loans may mature too soon to allow farmers to carry their crops over into subsequent years when supplies may be smaller and prices higher. When low prices persist through a crop year, producers with crops under a maturing loan must either default, thereby foregoing potential price increases, or refinance the loan commercially

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2/ See the article on export market programs for a more complete review of CCC sales on the international market.

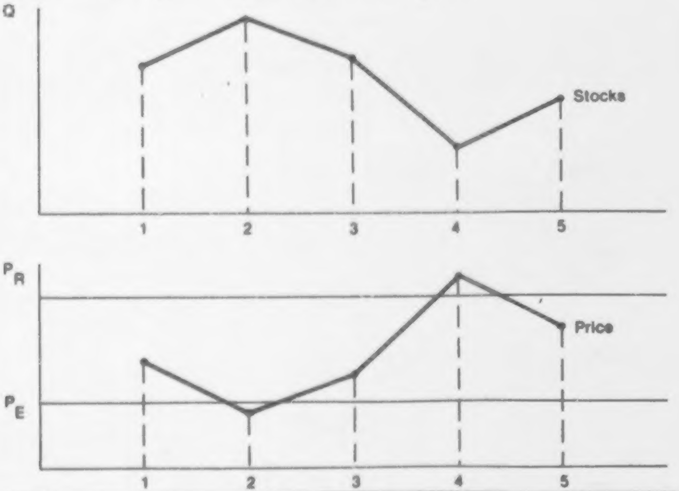
at less attractive terms. To provide extended nonrecourse loans to wheat and feed grain farmers, the farmer-owned reserve program was authorized by the Food and Agriculture Act of 1977. While CCC reseal programs occasionally allow farmers to extend their loans past the usual 9-month maturity date, the FOR provides a 3- to 5-year continuing program to address the problem of stabilizing grain prices across marketing years.

The FOR was designed as a type of buffer stock, encouraging farmers to accumulate stocks of wheat and feed grains when supplies are relatively large and price expectations are low, and to sell grain when free stocks are reduced and prices rise. Figure 5 illustrates the operation of a hypothetical buffer stock program. Stocks accumulate when the market price (P_M) is at or below a reserve loan rate or entry price (P_E), such as in period 2. Stocks are released onto the market when prices rise above a release price (P_R), such as in period 4. By attempting to control the quantity of grain on the market, a buffer stock helps to keep prices within the entry-release price band.

The FOR program in concept helps stabilize commodity prices by offering producers incentives to hold stocks for 3 to 5 years without penalty, unless market prices rise to an announced release price. To encourage participation in the FOR, farmers are offered advanced storage payments (currently 26.5 cents per bushel per year, 20 cents for oats), low interest charges (which may be waived after the first year), and sometimes higher rates for reserve loans than for regular CCC loans. Once market prices equal or exceed the release price, storage payments are discontinued, encouraging producers to repay their loans and market

Figure 5

Operation of a hypothetical buffer stock program



their grain. Thus, the FOR is intended to control price variability within a price corridor defined by the reserve loan rate (which was higher than the regular CCC loan rate during 1980-82) and the release price. Since the sale price for CCC-owned stocks is currently 5 to 10 percent above the FOR release price, farmers are not forced to compete directly against the Government in the release of stocks to the marketplace.

Target Prices and Deficiency Payments

Experience with high loan rates and ineffective supply control in the fifties eventually led in the sixties to the extensive use of direct payments. These payments were intended to supplement lower price supports and to encourage participation in voluntary acreage reduction programs that were employed to deal with the problem of excess production capacity. The deficiency payment program, adopted in 1973, refined existing payment programs but differed from previous approaches in several ways: For the first time, the amount of the payment varied inversely with price to make up the difference between the target support level and actual prices; the basis of the support level was shifted away from the parity price concept and toward cost of production; rules were established to adjust the target support level annually; and deficiency payments were made for any year in which the average farm price for a portion of the year was below the target price, even when acreage reduction or set-aside programs were not implemented. With the exception of wool and mohair, direct payments resulting from the use of target prices represent one of the most recent measures to support prices and incomes (deficiency payments for wool and mohair were authorized by the National Wool Act of 1954). The target price and deficiency payment program began with the 1974 crops of wheat, corn, sorghum, and upland cotton. Barley, oats, rice, and extra-long staple cotton were added later.

The target price for any crop is used to calculate deficiency payments, so called because the payments would make up the difference (or deficiency) between an established target price and the higher of: (1) the average market price during the first 5 months of the marketing year or (2) the national average loan rate. The cotton deficiency payment is based on the farm price received during the calendar year which contains the first 5 months of the marketing year. No payment is made if the market price exceeds the target price. Eligible producers are assured of receiving, in addition to a loan rate, any announced deficiency payment per unit of output. Thus, the Government assumes the risk of making deficiency payments at an undetermined rate, whereas in earlier direct payment programs, payment rates were fixed in advance. However, the maximum deficiency payment per unit of production--the difference between the target price and the loan rate--is known in advance.

To the extent that market price is allowed to vary between the target price and loan rate, there is some basis for saying that the loan and target price programs "separate" price support from income support. That is, separate programs are used to accomplish these two objectives, with the deficiency payment program supplementing income provided by the loans (or by market prices supported by the loans). The gap between the target price and loan rate, in concept, allows market prices to vary more with supply and demand conditions and reduces the likelihood of accumulating excessive stocks, while maintaining income support through direct payments.

Eligibility for Program Benefits

Eligibility for price and income support benefits requires compliance with announced acreage reduction or other supply control programs. When acreage control programs are in effect, a portion of cropland must be placed in an approved conserving use, and this land is not used in computing total payments. Also, a producer cannot receive both disaster payments and deficiency payments on the same bushel or unit of production.

Since 1977, production eligible for payment has been based on the permitted planted acreage and program yields. The acreage base for deficiency payments to individual producers has been the average of acres planted to a particular crop on their farm over the previous 2 years, plus any diverted or set-aside acres. Prior to 1977, payments were based on a system of acreage allotments tied to historical planting patterns. Acreage allotments were continued for rice until the 1981 farm legislation, which converted them to a current plantings concept.

A farm's program payment yield for a given year is an average of yields per harvested acre for recent years, adjusted for low yields caused by natural disasters. In some cases, yields can be assigned based on regional averages. However, a "proven yield provision" in the law ensures that no reduction in yield can be forced on farmers who can prove their yield was higher than the program yield.

RELATIONSHIPS AMONG PRICE AND INCOME SUPPORT MEASURES

A complication in evaluating farm programs is that the impacts of nonrecourse loan rates, stock management activities, and target prices on the farm sector change over time as particular program parameters are adjusted to fit current economic or political conditions. To get an idea of how price and income support measures have been used, it is instructive to view their development over five periods--prior to 1952, 1953-60, 1961-71, and 1972 to the present. A detailed description of U.S. agricultural programs since the thirties is beyond the scope of this study. Historical reviews of farm programs may be found in (2, 3, 4, 14, 17, 18, 34, 35, 36, 40).

Pre-1952 Period

Farm production had been encouraged during World War II and the value of exports increased more than tenfold between 1940 and 1948. Price supports, which had been implemented in 1933, were increased to 90 percent of parity (see appendix) and remained at those levels for 2 years following the War. There were also attempts, albeit unsuccessful, at direct payments to farmers in an effort to ease the adjustment of resources in agriculture to a peacetime economy. However, a drop in demand and maintenance of supply incentives (in the form of high price supports) began to result in an accumulation of CCC-owned commodity stocks.

1953-60

Between 1953 and 1960, agriculture experienced an unprecedented growth in technology and productivity. In the early fifties, flexible programs were enacted to lower price supports from the 90-percent-of-parity level. During this period, more emphasis was placed on demand expansion with programs such as P.L.-480 than on supply control to deal with excess production.

However, the rapid adoption of hybrid corn and other improved production practices led to increased production and declining farm prices and incomes. Because producers could not sell their products at a price above the loan rate, nonrecourse loans were forfeited, and stocks held by the CCC accumulated.

The relationships between stocks, the loan rate, and the price received by farmers are illustrated in figures 6 and 7 for wheat and figures 8 and 9 for corn. The wheat and corn loan rates exceeded their respective farm prices every year from 1952 to 1960. In 1951-54, the loan rate for wheat was approximately 90 percent parity (table 1). During this period wheat stocks increased from 320 million bushels to over 1.1 billion bushels (fig. 6). Export sales were also reduced because of these relatively high loan rates. Although the support level was reduced to 75 percent of parity by 1960, wheat stocks continued to accumulate to over 1.5 billion bushels. The situation was similar for corn (table 2 and figs. 8 and 9).

Table 1--Wheat parity prices, loan rates, market prices, and variable costs

Year	Parity price	Loan rate	Market price	Average variable cost per bushel
		Dollars per bushel		
1951	2.40	2.18	2.11	NA
1956	2.42	2.00	1.97	NA
1961	2.38	1.79	1.83	NA
1966	2.58	1.25	1.63	NA
1971	2.91	1.25	1.34	NA
1974	3.95	1.35	4.09	1.15
1976	4.87	2.25	2.73	1.36
1981	7.07	3.20	3.65	2.05
1982	7.26	3.55	3.50	2.00
1983	7.39	3.65	3.54	1.73

NA = Not available.

Table 2--Corn parity prices, loan rates, market prices, and variable costs

Year	Parity price	Loan rate	Market price	Average variable cost per bushel
		Dollars per bushel		
1951	1.77	1.57	1.66	NA
1956	1.76	1.50	1.29	NA
1961	1.61	1.20	1.10	NA
1966	1.62	1.00	1.24	NA
1971	1.99	1.05	1.08	NA
1974	3.04	1.10	3.02	1.17
1976	3.45	1.50	2.15	1.08
1981	5.04	2.40	2.50	1.45
1982	5.06	2.55	2.62	1.36
1983	5.17	2.65	3.30	1.36

NA = Not available.

Figure 6

Wheat ending stocks

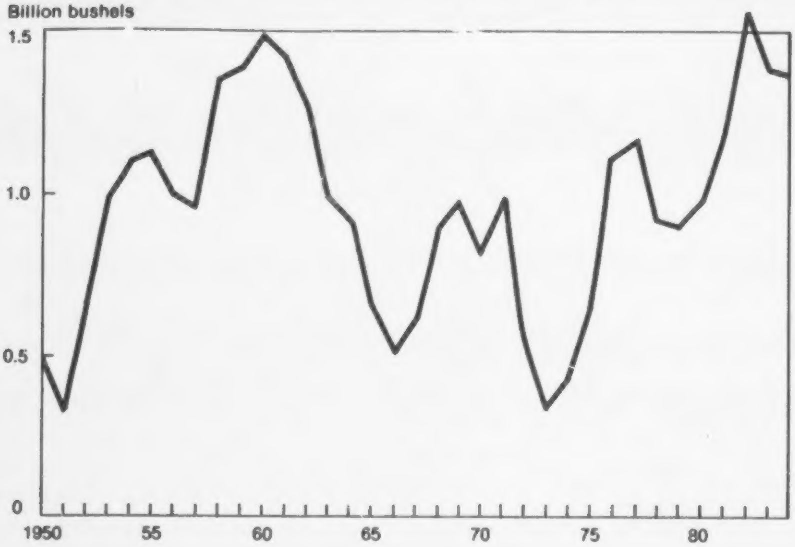


Figure 7

Ratios of wheat loan rate to farm price and diverted to harvested acres

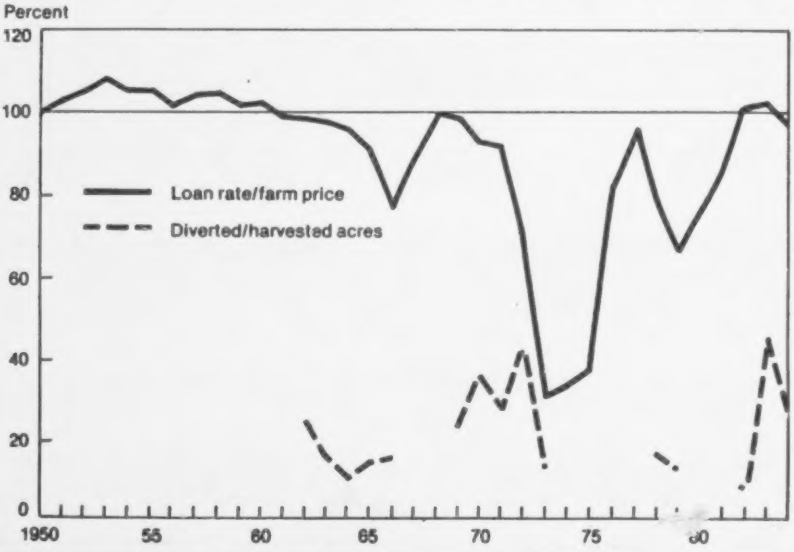


Figure 8

Corn ending stocks

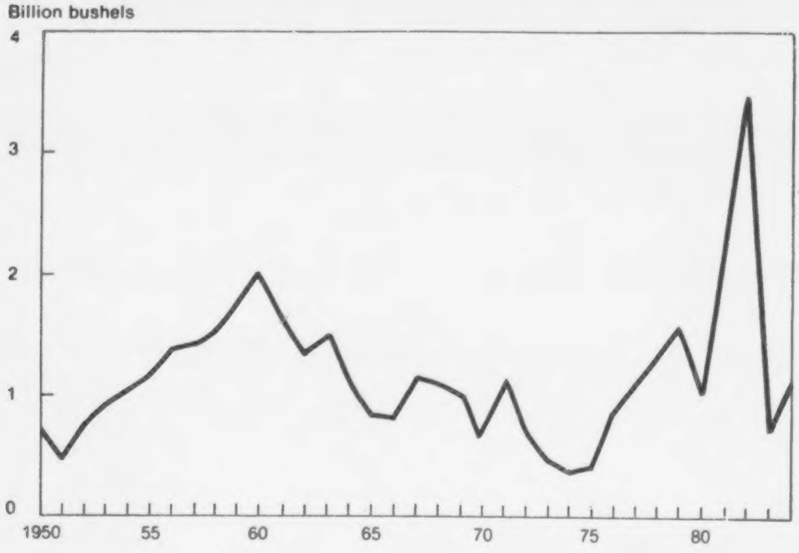
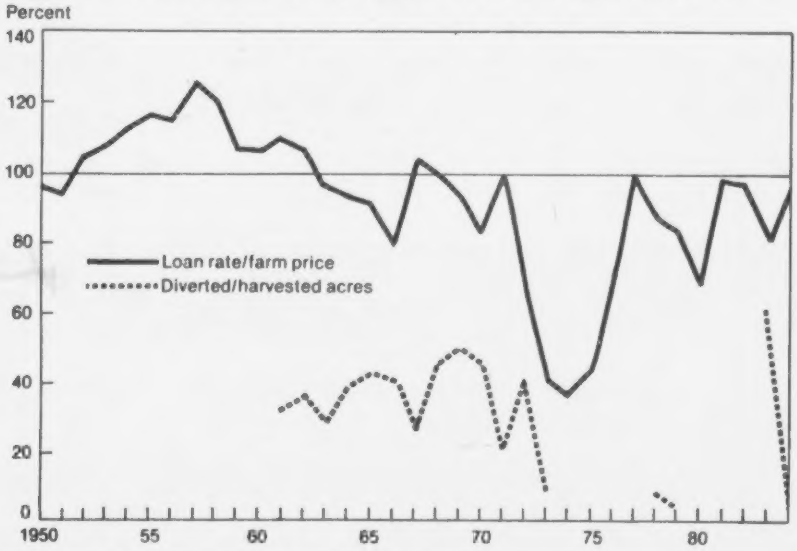


Figure 9

Rates of corn loan rate to farm price and diverted to harvested acres



1961-71

Steps were taken during 1961-71 to reduce the accumulation of CCC stocks. Prior to the sixties, nonrecourse loans were the primary means of guaranteeing returns to producers. Farm legislation in 1961 and 1962 provided the initial separation of loan rates and income support payments. Support prices were reduced to be more in line with world market levels. Income was supported by direct per-unit support payments to producers. However, to receive price support payments, producers were required to comply with voluntary acreage retirement (set-aside) provisions. These payments above the loan rate were, in effect, partial compensation for reducing production. Since the supply control programs were voluntary, it was necessary that complying farmers be made no worse off than noncompliers (by means of paid land diversion or price support payments) if sufficient participation was to be realized to achieve price support objectives.

The wheat and corn examples in figures 7 and 9 show that acreage diversion and set-aside programs have often been associated with market prices above loan levels and, hence, reduced stock accumulation. The acreage control programs, along with continued reductions in the support price for wheat during the early sixties, resulted in a decrease in wheat stocks to about 500 million bushels by the end of 1966. Corn surpluses were also erased by the early seventies. However, payments for acreage and price support for corn producers increased from $300 million in 1963 to over $1.1 billion in 1972. Diversion and support payments for wheat ranged between $243 million and $859 million during 1963-72. Cotton payments over the same period were between $39 million and $807 million. No payments were made for rice.

1972 to the Present

Beginning in 1972, there was a sudden, large increase in exports of U.S. agricultural products because of drought-reduced foreign harvests, economic growth in developing countries, credit subsidies, and devaluation of the U.S. dollar. A combination of large sales to the Soviet Union and a world food crisis left virtually no reserves after 1973. The emphasis began to shift towards greater market orientation. Indeed, there was more concern with how to supply the increased demand for U.S. farm products than with price and income support, since farm income was beginning to climb rapidly.

The Agriculture and Consumer Protection Act of 1973 authorized use of target prices and deficiency payments. In concept, the target price-deficiency payment program was to provide income support while the loan rate provided a price floor. In practice, deficiency payments, as with price support payments of the sixties, also acted as an incentive to participate in voluntary acreage reduction programs. The escalation of export demand during the seventies brought record farm incomes, but it also increased exposure to the greater uncertainty of international markets. As a means of dealing with the widening swings in prices and incomes, the Food and Agriculture Act of 1977 authorized the FOR program.

The Secretary of Agriculture has broad discretionary authority to determine most of the incentives for FOR participation. Eligibility requirements for entry into the program, reserve entry and release prices, storage payments, waiver of interest charges, and the maximum size of the reserve are left to the Secretary's determination, with only minimal restrictions placed by the Congress. In contrast to the provisions for the FOR, the Congress specifies in legislation minimum CCC nonrecourse loan rates, target prices, and the conditions under which CCC stocks can be released.

Just as U.S. agriculture began to gear up for an era of expanding production and trade, several events began to cast doubt on such prospects. In response to the Soviet invasion of Afghanistan, an embargo was placed on exports to the USSR in January 1980. Other grain producing countries began to expand their production and went after Soviet and Eastern Bloc trade. With this drop in export demand and the inflexibility of other program options, there were few alternatives to deal with the potentially price-depressing production except to make the FOR more attractive for stock accumulation. For the 1981/82 crop year, the Secretary eased producer eligibility requirements for the FOR, offered reserve loan rates higher than regular CCC loan rates, and waived interest charges on reserve loans. The effect of these decisions was a sizable increase in FOR stocks of wheat and corn, as shown in figures 1 and 2.

As the FOR accumulated grain, foreign producers expanded their output in response to the price incentives provided by the U.S. loan rate and the strengthening of the U.S. dollar against other currencies. A worldwide recession also hindered U.S. exports. Favorable weather conditions prevailed around the world, and a global grain glut emerged. The Agriculture and Food Act of 1981, in response to anticipated continued inflation, legislated higher loan rates and target prices for the next 4 years than those that prevailed in 1980. These program incentives continued to encourage global production, while U.S. exports continued to decline. In 1982, farm income fell and once again the flexibility of the reserve was used for price support and as a substitute for production controls. For example, the reserve loan rate for the 1982 corn crop was set 35 cents per bushel above the regular loan rate and 20 cents above the target price. Thus, because of the use of FOR for income enhancement, and to encourage program participation in 1982, large quantities of grain stocks accumulated. Accumulation of large supplies eventually led to the 1983 Payment-in-Kind (PIK) program. During 1983/84, FOR stocks of corn fell by more than 1.1 billion bushels and FOR stocks of wheat decreased by over 0.4 billion bushels. Virtually all of the decline in wheat stocks and much of the decline in corn stocks were attributable to the PIK program. Corn prices exceeded FOR release prices because of the 1983 drought, causing the rest of the decline in FOR corn stocks.

Recent experience indicates that using grain reserves to support farm income in the face of excess productive capacity results in large stock accumulation, especially when market forces and other program provisions tend to encourage increased production and progressively lower real prices. Other problems associated with long-term storage--quality deterioration, cost of storage payments and interest waivers, the possibility of eventual forfeiture to the Government, and the restriction of exportable supplies--have raised further questions about whether grain reserves are a cost-effective means for achieving farm income support.

This overview of the interrelationships between loan rates, stock management programs, and target prices and deficiency payments indicates that the impacts of these programs depend upon the relative levels at which each is set. As a direct result of large Government stock accumulation caused by relatively high and rigid nonrecourse loan rates, additional policy tools have had to be used to limit production, such as paid diversion and voluntary acreage set-aside and reduction programs. In addition, many other factors beyond the control of the domestic farm sector, such as war, export variability, world weather patterns, rapid technological advancement, and actions in the macroeconomy, influence how price and income support program tools interact with each other and collectively how they affect the farm sector.

MEETING PROGRAM OBJECTIVES

A review of price and income support programs suggests that their stated objectives are multiple and occasionally conflicting. These objectives can be summarized as being an attempt to maintain farm prices and income at a reasonable and relatively stable level compared to the nonfarm economy, to assure consumers an adequate supply of inexpensive farm commodities, and to ease the adjustment of resources in and out of agriculture. This section reviews the available evidence on how well price and income support programs have met these policy objectives.

Price and Income Support

One means of evaluating the degree of price and income support provided by farm programs is to estimate what difference these programs made in the farm sector compared to what might have happened in their absence, that is, in a free market. Studies have used a wide variety of research methods for such comparisons (15, 28, 29, 37, 38). Results of these studies indicate that in the absence of farm programs, prices received by farmers would have been between 10 and 25 percent lower and that aggregate net farm income would likely have been 20 to 60 percent lower during 1955-72.

During the seventies, market prices were generally above price support levels and acreage diversion for supply control was not used very often. Also, no significant deficiency payments were made before 1977. Hence, the farm sector, in effect, operated in a free market during the midseventies. During the late seventies and early eighties, loan rates began to act more frequently as a price floor, and deficiency and diversion payments were made more often. Elimination of farm programs during the last few years would most likely have led to at least shortrun declines in farm prices and incomes.

Commodity programs apply mainly to crops. There are essentially no direct price and income programs for livestock products except dairy. However, crop programs significantly affect livestock feed costs and programs which raise feed prices and can lower livestock returns, at least in the short run. Some fruits and vegetables are affected by a different set of programs, marketing orders.

So, Government programs appear to have increased the average income of commercial grain, oilseed, and fiber producers above what would likely have been the case in a free market. But, another major goal of farm policy has been to help move the incomes of farm operators to a level comparable with that of nonfarm people. There are many ways of measuring relative income of farm and nonfarm people, and the size of the income gap depends significantly upon which groups are included and excluded. 3/ The coverage of farmers can include: all persons living on farms; farm operators living on farms; all farm operators, regardless of where they live; farm operators whose principal occupation is farming; and, farm operators whose principal occupation is farming and who are not retired. There is also the question of what income is to be included: only income from farm operation; income of farm operators from all sources; income of farm operators and other members of their families from all sources; only money income; money income plus perquisites such as home-produced food and the rental value of farm dwellings; or, income before or after taxes.

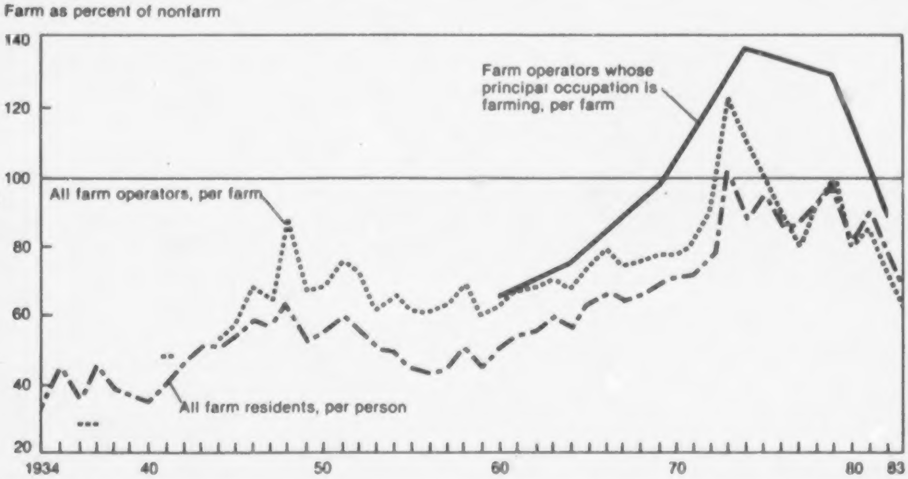
3/ The authors wish to acknowledge the contributions to this section made by Alden C. Manchester, senior economist, National Economics Division, Economic Research Service.

The comparison of income per person after taxes between farm residents and the nonfarm population is available from 1934 to the present. These data include only farm operators living on the farm and farm laborers living on the farm where they work. According to this measure, income per person of the farm population was only a third of that of the nonfarm population in 1934 (fig. 10). It has generally risen since that time, but with much variation. In 1973, the income of farm residents was slightly above that of nonfarm residents and, since then has varied from 75 to 98 percent of the per capita after-tax income of the nonfarm population. This comparison is strongly affected by the decline in the number of farm laborers and in the proportion of them living on the farm where they work. It is also affected by the closing of the gap in family size between farm and nonfarm families. In 1949, 65 percent of all hired farmworkers lived on farms. By 1983, the proportion had declined to 22 percent (1). Farm-resident families averaged only 1.2 percent larger than nonfarm families in 1983 (1), but 17 percent larger in 1950.

Information is available since 1960 to compare the incomes of farm-operator families from all sources with the incomes of nonfarm families. On this basis, the average income of farm operator families was 83 percent of the income of other families in 1960 and generally above 100 percent from 1971 to 1981 (fig. 10). Since 1981, the average income of farm-operator families has been below that of nonfarm families. This calculation assumes that there is one family per farm, a simplifying assumption which is not entirely correct. Partnerships and corporate farms typically provide a living for more than one family, and farms owned by trusts, estates, and institutions are not typically associated with families in any direct fashion. Information available from the 1974 Census of Agriculture indicates that there was an average of 1.04 families

Figure 10

Comparison of farm and nonfarm incomes



per farm in that year, although data on operation of more than one farm by a family would probably lower the number of families per farm if such data were available.

The incomes of all farm operators--including those whose principal occupation is not farming--were above those of other families throughout most of the seventies. If capital gains on real estate are included with current income, average income of all farm operator families was above that of nonfarm families from 1961 through 1980. This does not include any capital gains by nonfarm families, who have experienced significant capital gains on owner-occupied housing over much of the 1961-80 period.

Thus, it would appear that, with the combination of public programs and many other influences over the past 20 years, the general level of current incomes of farm operators has compared favorably with those of nonfarm families. However, not everyone in the farm sector shares in the higher farm incomes. Operators whose principal occupation is farming are much more heavily represented in the larger size farms and tend to have average incomes substantially higher than for all farm oprators. Approximations based on data from Censuses of Agriculture indicate that, in the early to midsixties, the incomes of operators whose principal occupation was farming averaged 4 to 8 percent higher than the average for all farm operators. In 1969, 1974, and 1982 it was about one-fourth greater; but, in 1978 the difference rose to 43 percent (see article on the profile of the farm sector for further discussion of farm income measures).

Poverty is higher among farm residents than among others. In 1982, 22.1 percent of persons living on farms were in poverty, compared to 14.8 percent of the rest of the population (41). But, the poverty that exists in agriculture cannot practically be remedied through price supports or other commodity-oriented farm programs based on production. This is because farm families who fall below the poverty line are typically only marginal producers of program crops. Also, the incidence of poverty among farm laborers, the unemployed, and the retired living on farms tends to be higher among farm operators.

A review of the target price-deficiency payment program during its 10 years of existence suggests that its effects are not limited to income support. Use of deficiency payments to achieve participation in acreage reduction programs converts them into a tool to raise prices rather than just a device to stabilize income when prices are low. When prices increase because of an acreage reduction program, deficiency payment rates are reduced by the amount that the price rises above the loan rate. Income support goes to producers through higher commodity prices and consumer expenditures rather than through deficiency payments out of tax revenues. Thus, income and price supports are no longer separate. Market prices, and consequently, resource allocation decisions, are being influenced by income support payments. The concept of income support was introduced precisely to prevent this from occurring.

If no acreage reduction programs were in effect, or if acreage reduction programs were carried out entirely through paid diversion to reduce output and enhance prices, the deficiency payment would be a direct income transfer rather than a compensation for voluntary diversion. However, in either case the acreage reduction program results in higher prices than would have prevailed without it, and therefore works at cross-purposes with the concepts of setting loan rates at or below competitive price levels, providing income support through direct payments, and allowing market prices to respond to demand and supply forces. Additional implications of acreage reduction programs are addressed in a separate article on that subject.

Price and Income Stability

One of the objectives of commodity programs has been to stabilize farm prices and income. Programs addressing farm income stabilization have generally involved attempts to reduce variability in commodity prices by means of stock management activities.

Throughout recorded history, individual farmers and nations have recognized that a portion of each bountiful harvest should be stored for use when food supplies were relatively scarce. Besides abnormally harsh weather conditions, pests, and disease which frequently can reduce food supplies, modern societies also face many problems related to demand. As traditional trading boundaries have widened, demand for agricultural products has become subject to fluctuations in global economic conditions, food supplies in other countries, and changes in Government policies at home and abroad. Taken individually or in combination, these influences can cause wide swings in farm prices and incomes from year to year.

Wide swings in income are an increasingly important problem facing farmers. Widely fluctuating market signals make it hard for farmers to efficiently plan and allocate resources. Many farmers who made long-term plans based on the expectations prevailing during the early seventies faced bankruptcy in the early eighties. Even farmers who have an adequate income when averaged over a period of years may not be able to weather a few years of reduced income under a heavy burden of debt.

The uncontrollable biological and, to a lesser extent, economic and political problems that affect agriculture underscore the arguments for stock management--the orderly accumulation and dispersal of stocks--whether by private firms, individuals, or the Government. Stock management tends to even out marketings throughout the crop year and over crop years, stabilizing commodity prices and farm income; assuring an even distribution of supplies for domestic consumers, export markets, and disaster relief; and ensuring that excessive stocks do not accumulate.

Some maintain that in a market-oriented economy the management of grain reserves is best left entirely to private individuals and firms. There is no doubt that pipeline stocks will be held by private parties in order to ensure an uninterrupted flow of commercial marketings. Also, the amount of grain that private individuals and firms are willing to hold increases as the Government withdraws from the marketplace. This has been found to be especially true when Government stock management programs do not attempt to keep commodity prices within a relatively narrow range, since highly variable market prices present more opportunities for risk-takers to profit from speculative purchases and arbitrage activities and encourage commodity processors to hedge through crop purchases and stockholding. Futures, options, and private insurance markets have been developed to address the riskiness of private stockholding behavior.

What then is the rationale for Government involvement in the management of grain reserves? A primary objective of the private sector is profit maximization. Stocks are held not only to meet normal commercial needs, but also in anticipation of grain price increases. One of the objectives of Government stock management is to assure social well-being and food security for the general population. Because of possible conflicts arising from these differing objectives, the private sector may not manage stocks in an optimal manner from society's point of view. Private stocks are held not only to meet pipeline needs, but also in anticipation of forseeable events such as expected grain price increases. Governments recognize the long-term need to hold stocks in periods of rising and declining prices. The value of reserves to society, especially food security reserves, arises from their availability when an unexpected event occurs. Thus, many feel that there is a role for the Government as a participant in managing reserve stocks and distributing the risk among taxpayers.

When there are surpluses, commodity programs offer protection to participating producers, who are guaranteed at least the nonrecourse loan rate for their eligible crop if they choose to default on their loan. In years of crop shortfalls, Government-owned stocks can be released when prices rise to dampen the price rise. Because of the restrictive domestic sale provisions of CCC-owned stocks, CCC inventories generally can be sold only under very tight supply conditions. However, nonrecourse loan rates have sometimes been set above market-clearing levels, rather than stabilizing prices around a market-determined price trend. At such times stocks, and particularly CCC stocks, have accumulated (figs. 6-9).

Price-Stabilizing Implications of the Farmer-Owned Reserve

The FOR was initiated primarily to address the price and income stability issue associated with greater export exposure. If a grain reserve is to act solely for price stabilization purposes, the price corridor defined by the entry and release prices would need to be set so that, once the buffer stock is established, the quantity of grain entering the reserve when prices are below the entry price would, on average, equal the quantity released over time when prices were above the release price. This would imply that the reserve stock price corridor should symmetrically bracket long-term market price trends, and should adjust to changes in those trends. If the entry and release price band is too high relative to the underlying market price trend, excessive stocks would accumulate. If the reserve price band is set too low relative to the market price, stocks would be depleted and the market price could not be kept from increasing above the release level (33).

Another issue related to buffer stock price corridors is the size of the price differential between the entry and release prices; that is, how much price stability is desired. A relatively narrow price differential provides more price stability but requires a larger stock level to keep the market price within bounds. A relatively narrow price corridor would tend to discourage private speculative stockholding because it would reduce the potential to profit from price increases. If the price corridor is too narrow, it would not be enforceable even if stocks were larger. Unless market prices are allowed to rise high enough to cover the principal and interest on a participant's nonrecourse loan, stocks would not come out of the reserve.

Price relationships for CCC and FOR stock activities are presented in table 3. Experience with the FOR to date indicates that, if the FOR is to act primarily for price stabilization purposes, the price band may need to be reconsidered. For example, in 1982-83, the reserve release price of $4.65 per bushel for wheat exceeded the regular loan rate by $1.10 per bushel. Recent USDA analysis indicates that variability within a price band set this wide is not significantly different from that which would prevail in the absence of a FOR (31). It is possible that a relatively wide price band may be necessary to allow the FOR program to function, given regional differences in commodity prices and the legislated minimum target prices. However, without realignment of the release and loan rates, or reduction in both, FOR stocks are likely to accumulate over time and the program is likely to be less effective in reducing price variability. The USDA results tend to agree with the study by Gardner (11) that found that corn and wheat prices during the 1977-78 period were just as variable under the FOR as before its implementation. Just (20) discovered relatively minor price stabilization under the FOR during the same period. However, Meyers and Ryan (24) estimated that variation in wheat prices during 1978-80 was 16 to 17 percent less with the FOR than without, and variation in corn prices was 22 to 26 percent less with the FOR. These different conclusions can be traced in part to different estimates of the substitutability between private and FOR stocks.

Substitution Between Private and FOR Stocks

Wheat and feed grains began entering the FOR in 1977 and 1978. During the initial accumulation period, one would expect that the FOR represented an additional source of demand for wheat and feed grains, thus tending to raise the price. However, the price impacts of the reserve depend upon the extent to which grains placed into the FOR substitute for stocks that would otherwise have been privately held. Each bushel of grain placed into the reserve may increase total stocks by less than 1 bushel. If there is a sizeable substitution, the price-stabilizing and income-enhancement effects of the reserve are diminished, since there would be a transfer of private for Government stocks with relatively little net price gain.

As shown in figures 1 and 2, free stocks of wheat and corn have dropped since the FOR was opened. A substantial portion of the drop in free stocks came from stocks held as collateral for CCC nonrecourse loans which were allowed to be placed into the reserve. In the absence of the FOR program, these stocks would likely have been either forfeited to the CCC, sold on the market, or held in private storage, depending upon market conditions at the end of the 9-month loan period.

Table 3--Price relationships for CCC and FOR stock activities for wheat and corn, 1977-84

Year	Regular loan	FOR entry	FOR release	FOR call	CCC sales	Target price	Season-average farm price
	Dollars per bushel						
Wheat:							
1977	2.25	2.25	3.15	3.94	4.14	2.90	2.33
1978	2.35	2.35	3.29	4.11	4.23	3.40	2.97
1979	2.50	2.50	3.75	4.63	4.75	3.40	3.78
1980	3.00	3.30	4.20	5.25	5.83	3.63	3.91
1981	3.20	3.50	4.48	5.60	6.22	3.81	3.66
1982	3.55	4.00	4.65	--	5.12	4.05	3.50
1983	3.65	3.65	4.45	--	--	4.30	--
1984	3.30	3.30	--	--	--	4.38	--
Corn:							
1977	2.00	2.00	2.50	2.80	3.00	2.00	2.80
1978	2.00	2.00	2.50	2.80	3.00	2.10	2.25
1979	2.00	2.00	2.63	3.05	3.15	2.20	2.52
1980	2.40	2.40	2.81	3.26	3.42	2.35	3.11
1981	2.40	2.55	3.00	3.15	3.31	2.40	2.45
1982	2.55	2.90	3.25	--	3.58	2.70	2.62
1983	2.65	2.65	2.25	--	--	2.86	--
1984	2.55	2.55	--	--	--	3.03	--

-- = Not announced.

Sharples and Holland (32) estimated that each bushel of wheat added to the FOR tended to increase total wheat stocks (CCC-owned, free, and FOR) only 0.40 to 0.87 bushel. The remaining 0.60 to 0.13 bushel was a reduction by private stockholders. Sharples and Holland estimated that if the substitution effect was 0.87, revenue for wheat producers would have increased about 3 percent in 1977-78 over what their returns would have been with no reserve, with wheat prices estimated to increase 8 cents in 1977 and 54 cents in 1978. The higher revenue received by wheat producers was estimated to be partially offset by a decrease in Government deficiency payments. If the substitution effect was 0.40, wheat prices would have increased an estimated 8 cents in 1977 but only 20 cents in 1978, resulting in a 1.3-percent estimated net increase in producer revenue because of the FOR.

Other estimates of the substitution effect range between 0.2 and 0.9 (11, 20, 24, 31). These estimates differ because of the methods used to determine the substitution effect, the time period covered by the studies, and the assumptions made concerning other important economic variables. However, as a general conclusion, the closer the substitution value is to 1.0, the more stocks added to the FOR increase total stocks, and the higher the positive impact on commodity prices, other things remaining the same.

Price versus Income Stabilization

Traditionally, it has been argued that producers gain and consumers lose from price stabilization if the source of instability lies on the supply side; consumers gain and producers lose if the source of instability lies on the demand side; and that in both cases there are net benefits from price stabilization (23, 27, 43). Newberry and Stiglitz (26) argue, however, that producers are more concerned with variations in income than with variations in price. Income is defined as price times quantity produced minus cost. When the source of variability in farm income is quantity produced (because of variable yields), attempts to stabilize prices within a narrow range may actually contribute to destabilizing income. The empirical estimates of the gains and losses of price stabilization components of commodity programs have been inconclusive.

EFFECTS ON RESOURCE ALLOCATION

A general conclusion from published research is that, in the long run, a combination of price and income support programs, tax policies, credit policies, and changing technology leads to an increased allocation of labor and capital to agriculture together with a relatively fixed land area to produce agricultural commodities (7, 10, 15, 29). The result is that land returns rise relative to the return to labor and other inputs. Higher land returns take the form of higher rents and higher land values as the expectations of higher rents are capitalized into land prices. Labor earnings are increased modestly, if at all, because labor inputs are more elastic in supply and more readily substituted for by capital.

Once a firm becomes a producer of a commodity it will continue to produce the commodity in the short run so long as it can cover variable cost of production. If prices are sufficient to cover total cost at an acceptable rate of return, further investments will be made to expand production of the commodity. The data in figures 11 and 13 show the schedule of prices that would have been sufficient to bring new resources into the production of wheat and corn in 1981. Figures 12 and 14 show the schedule of prices at which resources would eventually be forced to withdraw from production, that is, price is below variable cost.

Figure 11

Wheat produced at less than the specified total cost per bushel, 1981

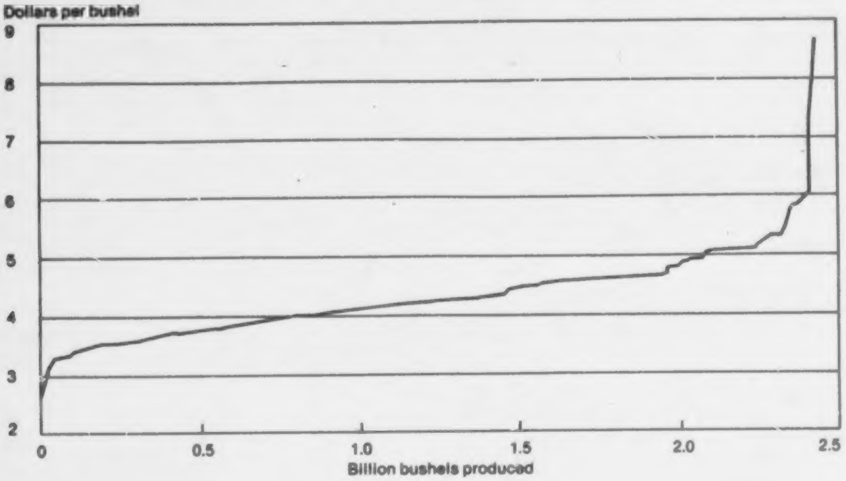


Figure 12

Wheat produced at less than the specified variable cost per bushel, 1981

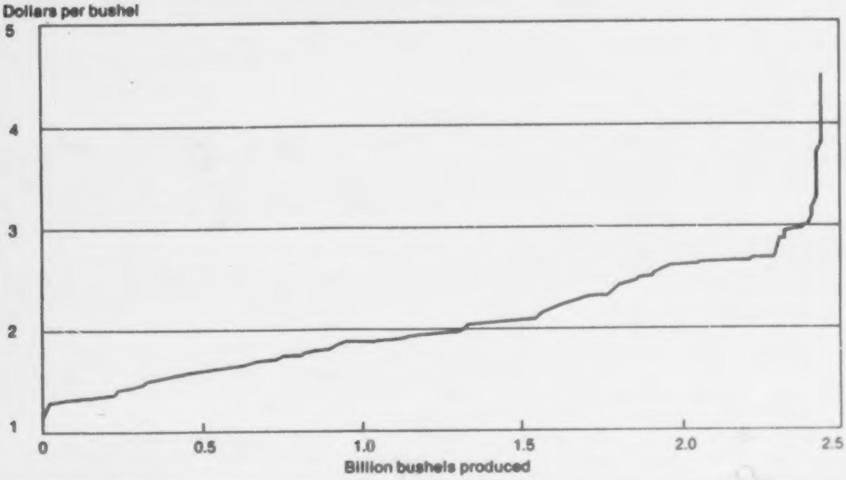


Figure 13

Corn produced at less than the specified total cost per bushel, 1981

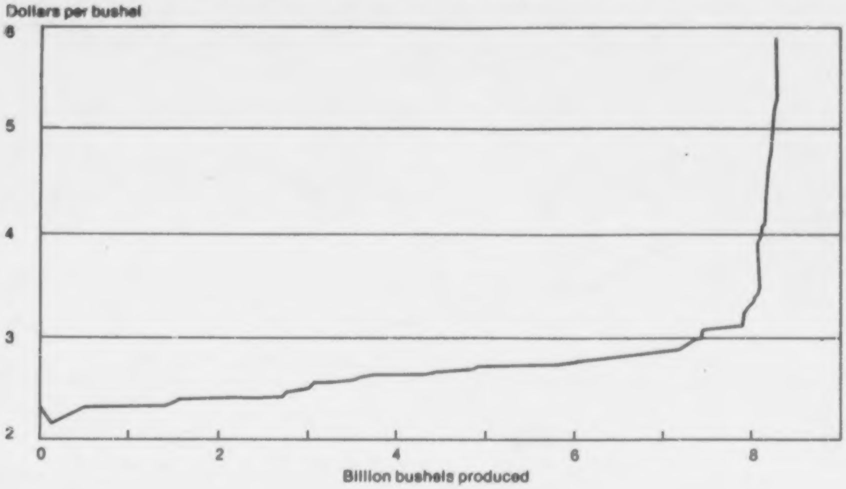
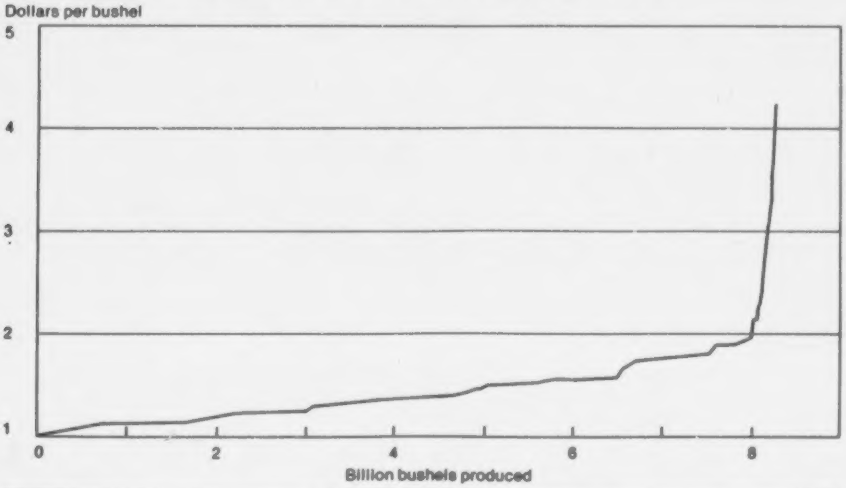


Figure 14

Corn produced at less than the specified variable cost per bushel, 1981



For wheat, prices would have needed to fall below $3.00 per bushel in 1981 and to remain below that level to get a significant reduction in production. At that level, almost no producers would cover total cost. For corn, a market price above $3.00 would have been sufficient to encourage additional production. On the other hand, the price would have needed to fall to less than $1.80 and remain there long enough so that producers incurred losses before producers would have been encouraged to withdraw from corn production.

National cost-of-production estimates provide only a crude basis for evaluating the impact of price support programs. Costs vary greatly because of yield differences among regions, yield variation among production seasons, variations in technology, and variations in management. For any individual producer, however, the bottom line is whether a return over variable cost can be earned at the current price. If it can, a farmer will produce in the short run even though total costs are not being covered.

Because the loan rate acts as a price floor, the minimum average price that farmers expected for the 1981 crop season was $3.20 (table 4). Since there were no acreage reduction programs in 1981, all farmers were eligible for loan rate protection. Producers who had a variable cost of less than $3.20 would have found it to their advantage to plant their maximum acreage, assuming opportunities on other crops were not as profitable. Acreage planted to wheat

Table 4--Cumulative distribution of wheat production
by specified variable cost levels

Cost per bushel less than:	1974	1981
	Percent	
$0.75	9.6	0
1.00	28.7	0
1.25	45.3	.5
1.50	59.7	16.3
1.75	71.7	33.5
2.00	79.2	53.3
2.25	85.5	66.4
2.50	89.6	77.4
2.75	91.6	93.6
3.00	93.5	96.9
3.25	94.8	98.8
3.50	96.2	99.0
3.75	97.2	99.1
4.00	97.8	99.8
4.50	98.4	99.9
	Dollars	
Average variable cost	1.15	2.04
Loan rate	1.35	3.20
FOR loan rate	--	3.50
Target price	2.05	3.81

-- = Not applicable.

increased from 71 million acres in 1974 to 88 million acres in 1981. For 1982, the loan rate increased to $3.55 per bushel, and, in spite of an acreage reduction program that idled almost 6 million wheat acres, 86.2 million acres of wheat were planted.

If the 1974 relationship between estimated variable costs and loan rates had been maintained, wheat loan rates would have been about $2.30 per bushel in 1981--nearly 90 cents below the 1981 actual level. Even a loan rate of $2.30 per bushel would have exceeded variable cost on about 66 million acres that produced about 70 percent of the wheat in 1981. Producers with higher costs would not have been encouraged to plant wheat unless market prices were higher. At $3.20 a bushel, the loan rate exceeded estimated variable cost on 97 percent of the wheat produced (fig. 12).

The loan rate and production patterns for corn in 1974 and 1981 were similar to those for wheat (figs. 13 and 14). For corn, estimated variable cost averaged about $1.20 a bushel and total cost averaged about $2.65 in 1974, while the loan rate was $1.10. In 1981, variable cost averaged nearly $1.45 and total cost about $2.67 (table 5). The 1981 loan rate was $2.40 per bushel, 95 cents above average variable cost. If the loan rate had increased in line with variable cost, it would have been about $1.33 per bushel in 1981 and would have exceeded variable cost for nearly 60 percent of all corn produced. At $2.40, the loan rate exceeded variable cost on 98 percent of the corn produced. Acreage planted to corn increased from 78 million acres in 1974 to 84 million acres in 1981.

The increase in planted acreage for wheat and corn during the seventies cannot be attributed solely to loan rates set above variable costs for most producers.

Table 5--Cumulative distribution of corn production at specified variable cost per bushel

Cost per bushel less than:	1974	1981
	Percent	
$1.00	33.1	0.2
1.25	62.1	28.0
1.50	78.5	66.0
1.75	86.7	80.0
2.00	92.5	96.0
2.25	94.7	98.0
2.50	96.1	98.4
2.75	96.8	98.6
3.00	97.7	98.8
3.25	98.3	99.6
	Dollars	
Average variable cost	1.20	1.45
CCC loan rate	1.10	2.40
FOR loan rate	--	2.55
Target price	1.38	2.40

-- = Not applicable.

Market prices for wheat and corn were well above their respective loan rates and per-bushel costs of production during much of the seventies and especially for 1980. However, from the farmer's perspective, a price above variable cost or total cost elicits a predictable management response. The implications for taxpayers and consumers in the near term and farmers in the longer term of a Government price versus a market price can be quite significant.

Target Prices and Resource Allocation

Target prices guarantee farmers an established revenue per unit approximately equal to the target price. 4/ The extent of price and income support separation achieved using a target price depends on other commodity program provisions. For example, a relatively high loan rate reduces the potential importance of the target price. In 1977, the target price and loan rate for corn were equal; thus, no deficiency payments were made. Also, programs that tie eligibility for deficiency payments to compliance with acreage reduction provisions may, in effect, convert a portion of the direct income support into a payment for production adjustment. Miller (25) found that for the 1972 direct payment program, about half of the payment was an income supplement while the remainder was compensation for acreage reduction. No similar studies have been conducted for years when target prices and deficiency payment programs were in effect, but the similarities in the programs would suggest that a portion of the deficiency payment may be appropriately viewed as compensation for idling acreage.

The impact of target prices on a farmer's production decisions depends upon the acreage eligible for target price protection (9). Under the 1973 act, acreage allotments were used to determine the production eligible for deficiency payments. Since the farmer could not receive deficiency payments on production in excess of the allotment acres, there was not as much of an incentive to increase production of an eligible crop whenever the market price was below the target price. The 1977 act changed the payment base for target price coverage from allotments to current plantings. Acreage allotments, based on historical planting patterns, were out of line with actual planting patterns. Applying target prices to normal production from current plantings has caused the target price to become much more important in crop production decisions.

Provisions were included in the 1977 and 1981 acts for an allocation factor to limit the size of the payment base when a set-aside was not in effect. The allocation factor is the ratio of national program acreage--estimated acreage needed for domestic, export, and carryover needs--to actual harvested acreage. The factor for wheat and feed grains must be between 0.8 and 1.0. The minimum national program acreage for cotton is 10 million acres with no minimum allocation factor.

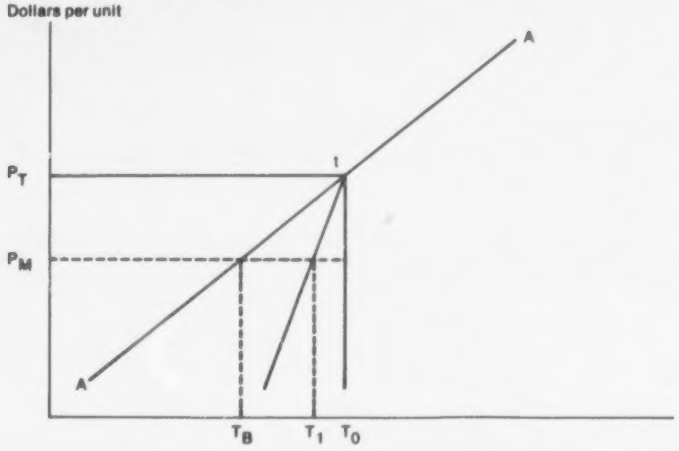
4/ Producers in different parts of the country receive different prices for their crop and it is not uncommon for some producers to actually sell their crop at prices above the established target price. This is particularly true across different wheat classes. However, when national average prices are lower, these producers also receive the full per-unit deficiency payment. Also, producers who receive less than the national average price receive the same deficiency payment rate and thus do not receive a total payment equal to the target price. The wool program is the one that varies the deficiency payment rate for each producer; the payment rate is a fixed percentage of the producer's sale price.

How target prices influence the acreage allocated to a particular crop when coverage is applied to current plantings is illustrated in figure 15. The shortrun relationship between expected price and acreage planted is AA, the target price is PT, and the expected farm price is PM. With an allocation factor of 1.0, the relevant supply curve is T_0tA. The supply curve is vertical (perfectly inelastic) over the range T_0t because at any price below PT (and above the loan rate), the difference between the market price and the target price will be made up by a deficiency payment to the farmer. If the allocation factor was, for example, 0.8, the relevant acreage response curve in figure 15 would be T_1tA. The horizontal difference between lines AA and T_0tA or T_1tA is the increase in acres planted due to the effects of the target price. This would be T_BT_0 acres with an allocation factor of 1.0 and T_BT_1 when the allocation factor is 0.8. The role of the allocation factor as a restraint on the influence of the target price on production response is such that the smaller the allocation factor, the less incentive the target price provides to increase planted acreage. Also, the closer the expected price is to the target price, the lower is the output-enhancing effect of a given target price.

Beginning with the 1982 crops, acreage bases were established for program crops. The acreage base is used to determine how much land is to be idled and how much production is eligible for deficiency payments when acreage reduction programs are in effect (see the article on acreage reduction programs in this report). For example, to qualify for program benefits under a 10-percent acreage reduction program for wheat, farmers could plant no more than 90 percent of their average wheat acreage planted during the previous 2 years.

Figure 15

Acreage response when the market price is below the target price applied to current plantings



Target Prices and the FOR

There is a tendency to set the release price for FOR stocks above the target price, since to do otherwise would increase the likelihood of making deficiency payments even in years when crops are in tight supply. Consider a case where the FOR release price is below the target price. When market prices are above the release level, producers are able to remove grain from the reserve and market it without penalty (assuming they repay their loan plus interest). As more grain is released, the market price tends to fall back towards the release level and, in this example, the market price never reaches the target price. Hence, deficiency payments would tend to be made more often than if the release price was above the target level. By law, the Government cannot sell CCC-owned stocks in the domestic market at less than 115 percent of the CCC loan rate or less than 110 percent of the FOR release price. When the target price is set at more than 115 percent of the loan rate, and the release price is above the target, the range over which prices must rise to trigger the release widens and stocks tend to remain longer in the FOR.

Capacity and Resource Use

Programs which reduce risk and supplement income affect resource use and values. The rationale for stabilizing prices and incomes over time is that resources should enter or exit agriculture based on normal economic signals rather than in reaction to temporary aberrations. Although recently a subject of debate, it has traditionally been argued that the existence of a high level of fixed assets in agriculture dampens the exit of resources from crop production (5, 6, 8, 16, 21). Once high-cost land and machinery resources enter farming, they tend to become fixed in production because of their relatively low worth outside of agriculture in comparison to their cost. Hence, extended periods of depressed demand could result not so much in exit of resources from farming but in lower returns to those resources remaining in agriculture. Farm labor is the exception to fixed adjustment since there are more nonfarm opportunities for labor than there are for land or machinery. Likewise, a temporary period of high prices might attract uneconomic investment into the sector. However, if stabilization and income enhancement measures are simultaneously and continuously pursued, the consequences are that productive capacity is not just maintained, but maintained at a level that results either in large stock accumulations or the need for diversion programs.

The package of farm programs in use during the eighties, particularly as they relate to target prices and deficiency payments, appears to have encouraged capacity expansion beyond that which the market would have generated. They also appeared to have maintaind capacity and discouraged the downward adjustment which market forces would have caused when farm income declined in the early eighties. Studies have shown that the additional income from higher prices has tended to be invested in capital and land, raising land values and resulting in a windfall to current landowners (28). Likewise, the lower prices and income experienced in recent years would be expected to cause land values to readjust.

The demand for farmland and capital investment has been shown to be positively influenced by farm income. As incomes rise, either because of market forces or farm programs, the quantity of land and other inputs in agricultural use rise, and so do land prices. As more inputs are devoted to agriculture because of higher incomes, productive capacity increases. This becomes a problem only when income of the sector is artificially enhanced or artificially reduced, resulting in a productive capacity that is out of balance with the requirements of the marketplace over an extended period of time. Once productive capacity in agriculture becomes too large or too small relative to the available markets, the process of adjustment can be difficult and lengthy. Resources are slow to move out of production once committed to agriculture because variable costs of production are typically quite small relative to total costs. Hence, even at very depressed price levels it pays farmers to produce in the short run.

Productive capacity, target prices, deficiency payment rates, and the allocation factor, as well as the market, influence the level of resource utilization in the short run. Farmers produce to the point that expected costs for the next unit of output are equal to its expected price. In the case of price-supported commodities, the expected price used to plan production can be influenced in a number of ways. It can be set by the loan rate or, if an acreage reduction program is in effect, it will be the expected price from a reduced crop--at some level above the loan rate. Alternatively, farmers may use the target price as the expected price. Target prices continuously set above market-trend levels provides incentives for production expansion.

There has been a tendency over the past decade to set target prices by a formula without tying them to market conditions. Consequently, acreage reduction programs have been used to raise prices and reduce budget outlays. But, these results also encourage nonparticipants--both domestic and international--to expand production in response to higher market prices, undermining the shortrun price effects of reduced acreage planted by participants.

INTERACTION WITH EXPORTS

Price and income support programs can often have conflicting impacts upon the demand for U.S. exports. Nonrecourse loan rates which hold U.S. prices above world market-clearing levels act as an implicit export tax and provide downside price stability to foreign producers. That is, they raise the price that foreign buyers must pay to acquire the commodity and reduce the quantity purchased. Foreign producers therefore have an incentive to increase production, causing them to both demand less U.S. grain and sell more of their own production on the world market at a lower price.

An example of the impacts of a high loan rate on the domestic and world commodity markets is illustrated in figure 16 (19). Export supply of the United States (XS) interacts with export demand of the rest of the world (XD) to give a world market-clearing price of OA and U.S. exports of OY. Suppose that the CCC nonrecourse loan rate is set above the world price at OB. The implications of a loan rate at OB are as follows: In the United States, excess supply increases from CE to FG. To maintain a domestic price floor at OB, the United States would have to withhold stocks equivalent to FG from the market. At loan rate OB, U.S. exports fall from OY to OZ, while quantity supplied in the rest of the world (ROW) increases from OH to OJ and ROW consumption decreases from OI to OK. Hence, setting the loan rate at OB in this example, other things remaining the same, would lead to a reduction in the quantity of U.S. exports and an increase in the quantity produced in the ROW. The loss of U.S. exports thus comes from both smaller foreign imports and loss of U.S. export market share. The United States has maintained import restrictions on some commodities (for example, dairy and sugar) to control the importation of less expensive foreign products when domestic loan rates were set above the world market-clearing price. If the United States sets a loan rate below the world price level OA, then there would not tend to be a direct effect upon the world market.

Figure 16

Domestic and international implications of a high loan rate in the United States

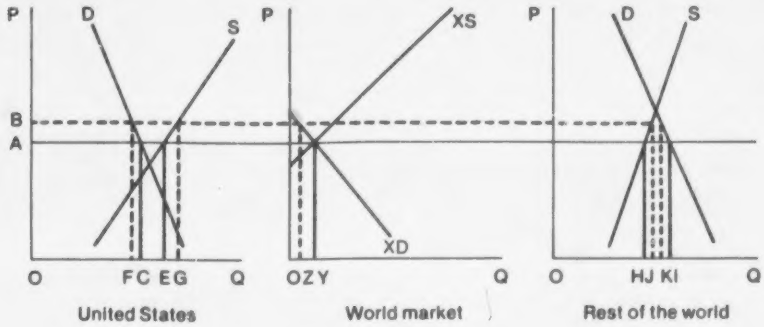
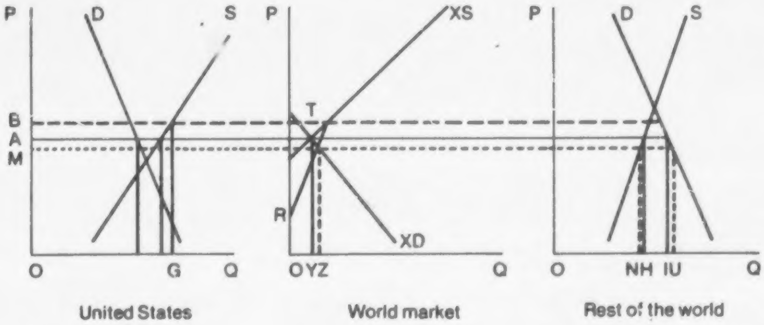

P
D
S
B
A
O
F C E G
Q
United States
P
XS
XD
O Z Y
Q
World market
P
D
S
O
H J K I
Q
Rest of the world

Figure 17

Domestic and international implications of a target price in the United States


P
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M
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G
Q
United States
P
XS
T
R
XD
O Y Z
Q
World market
P
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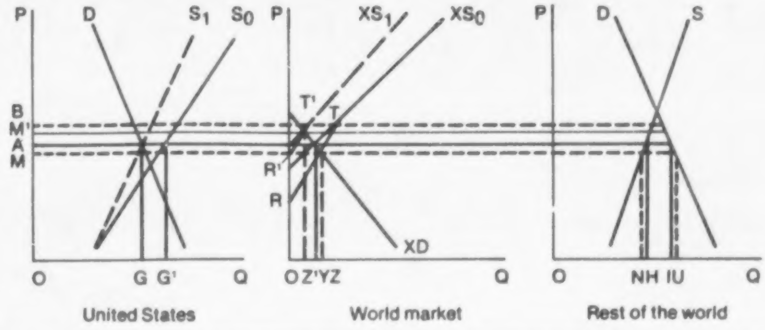
N H I U
Q
Rest of the world

Figure 18

Domestic and international implications of a target price combined with an acreage reduction program in the United States


P
D
S1
S0
B
M'
A
M
O
G G'
Q
United States
P
XS1
XS0
T'
T
R'
R
XD
O Z' Y Z
Q
World market
P
D
S
O
N H I U
Q
Rest of the world

Programs may be undertaken to offset the domestic stock accumulation in the United States resulting from setting a loan rate at OB in figure 17, such as acreage diversion or export programs to help regain the U.S. share of the export market. However, the obvious long-term response in the absence of other policy programs would be to reduce loan rates. The Agriculture and Food Act of 1981 recognized the domestic and international implications of a high loan rate by allowing the Secretary of Agriculture discretion to reduce loan rates for wheat and feed grains up to 10 percent in any one year whenever the market price in the preceding year did not exceed the loan rate by 5 percent. This authority was used in 1984 to reduce loan rates for wheat from $3.65 to $3.30 per bushel and for corn from $2.65 to $2.55 per bushel.

The export market response to adjustments in loan rates is not entirely clear. Export credit programs and the strong position of the dollar relative to other currencies have had a major influence on exports in recent years. There is at least circumstantial evidence, however, that grain prices in other countries are pegged to U.S. loan rates and target prices. Also, wheat acreage has expanded in other major exporting countries as the United States has taken steps to reduce stock accumulations generated when program prices were supporting the market.

With the loan rate set below world market prices, U.S. producers may still receive price and income support in the form of the target price-deficiency payment program. In this case, the market price may not be directly affected as under the loan program. Establishing a target price above world prices tends to encourage domestic production, however, which adds to world supply and puts downward pressure on world prices. In this instance, absent any domestic supply control measures, a target price-deficiency payment program can act as an export subsidy for U.S. producers.

Assume a U.S. target price is set at OB in figure 17. The loan rate is assumed to be below the world price level OA so that it has no direct impact upon the world market. The relevant U.S. supply curve (assuming no acreage reduction or other supply control program is in effect) is vertical at quantity OG as long as price is below the target price, and it follows the usual supply curve at prices above the target price. The slope of the U.S. excess supply curve (XS) in the world market also changes with the imposition of a target price, with the relevant curve now being RTXS. By defining OB to be a target price rather than a loan rate (price floor), the world price falls from OA to OM, U.S. exports increase from OY to OZ, production in the rest of the world decreases from OH to ON, and price falls from OA to OM. A target price set below the world market level would not tend to have an export expansion effect.

The effectiveness of a target price-deficiency program in expanding exports depends in part upon other program provisions. Supply control programs have often been used to reduce domestic supply and boost domestic prices. Since participation in supply control efforts is an eligibility requirement for commodity program benefits, the expansion in domestic production in response to the target price may be offset depending upon the effectiveness of an acreage reduction program.

Assume, for example, that the initial excess supply (XS_0) and excess demand (XD) curves are as shown in figure 18, resulting in a world price for the commodity of OA with U.S. exports equal to OY. Setting a U.S. target price at OB leads to a new world price of OM and an expansion of U.S. exports from OY to OZ. Suppose in addition to a target price program, the United States also implements an acreage reduction program. Assuming 100 percent participation in the program, the U.S. supply curve would shift back from S_0 to S_1 (a decrease in supply), causing a corresponding shift in the excess supply curve in the world market from RTXS to R'T'XS. World price increases to OM' with U.S. exports falling to OZ' and production in the rest of the world increasing from ON to OH. Hence, even with a target price, an acreage reduction program could reduce domestic production by a sufficient amount to increase world prices and reduce U.S. exports. However, this may not be the case if there is either low participation in the voluntary program or a relatively high rate of slippage in the program (slippage is discussed in the article on acreage reduction). If participation is less than 100 percent, then the vertical segment of the U.S. supply curve below the target price would pivot towards the left, depending on the rate of participation and the allocation factor.

International Grain Stock Issues

The examples above allude to the importance of domestic stock management activities as an integral component of U.S. price and income support programs. For example, in figure 16, stocks equivalent to FG would need to be be withheld from the market to support domestic prices at OB in the absence of supply control measures. The level of U.S. stocks has significant consequences for stockholding behavior of other nations. In recent years, the United States held about one-third of the world's wheat stocks and well over half of the coarse grain stocks. The United States shares certain policy goals with other leading exporting nations--Canada and Australia--such as maintaining adequate supplies to meet domestic consumption and export requirements and meeting food aid commitments. But, the question arises: Why does the United States absorb excess world supplies to a greater extent than other nations?

Responses to Supply Variability

Most countries other than the United States and Canada tend to hold only working stocks. Developed countries tend to offset production variability and stabilize consumption either by trade or by stock management. Recent research indicates that during 1960-82, the United States and Canada absorbed over 60 percent of their variability in wheat supply by adjusting stocks and acreage (9). Australia divided its adjustment fairly evenly between stocks and trade. None of these countries significantly adjusted domestic use of wheat. Domestic consumption adjusted more for coarse grains than for wheat stocks, primarily reflecting adjustments in livestock feeding. The United States still absorbed almost half of its coarse grain supply variability through adjustments in stocks and acreage, while Australia adjusted to changes in supply chiefly through trade. Hence, domestic stock policies of the United States have, to a major extent, also helped to stabilize world grain markets by absorbing supply shocks through stock management rather than through changes in trade.

Stocks as a Source of Food Aid

U.S. stock policies have benefited foreign countries by stabilizing prices and by assuring a reliable source of international food aid. The Food Security Wheat Reserve Act of 1980 authorized establishment of a reserve of up to 4 million metric tons of wheat (about 147 million bushels) solely for emergency humanitarian food needs in developing countries. Stocks of wheat acquired for this reserve may be released by the President to provide, by donation or sale, emergency food assistance to developing countries any time that the domestic wheat supply is so limited that wheat cannot be made available for distribution under P.L.-480. Any quantity removed from the reserve is to be promptly replaced either through purchases from producers on the market, if such purchases would not disrupt normal market conditions, or by designation by the Secretary of

Agriculture of stocks of wheat otherwise acquired by the CCC. Any funds used to acquire wheat through purchases from producers must be authorized in appropriation acts. Although specifically designed for purposes of food aid, the Food Security Wheat Reserve has served to isolate a small proportion of our current stocks from the market, thus enhancing domestic prices to a minor degree.

DISTRIBUTION OF PROGRAM BENEFITS

Price and income support programs are often criticized for contributing to the growth in farm size and to the decline in farm numbers. A nonrecourse loan program distributes benefits to farms in proportion to their level of production because payment limitations have not applied to nonrecourse loans. Current output-based programs provide relatively larger income enhancement for low-cost producers. Economies-of-size studies indicate that larger farms are typically lower cost producers (4). For some producers, loan rates are high enough to provide a return above the current cost of capital. These farmers have a substantial incentive to expand their operations. However, the nonrecourse loan program also allows those producers who operate at the margin where they just cover variable costs to continue in production. Hence, there is no clear evidence that nonrecourse loans in themselves are responsible for increased farm sizes. The safety net provided by nonrecourse loans and stock management activities tends to benefit all producers, but in proportion to their level of production.

Distribution of Target Price Benefits

The deficiency payment program has enhanced incomes of producers, directly or indirectly, although the total amount of the increase in cash income is uncertain. Total payments averaged $675 million per year during 1974-83, but some of this was, in effect, a payment for cooperating with "unpaid" acreage reduction programs and foregoing net returns on the idled acreage. To the extent that production was reduced and prices increased when acreage reduction programs were in effect, direct payments were reduced, but indirect benefits from higher market prices were received. How these benefits are distributed among farms is of interest. Because income was transferred to agriculture does not necessarily mean that specific income needs were met or that program objectives were accomplished.

Direct payments, while important to many farms with low incomes, have neither been equal among farmers nor have they been targeted to raise the income of small and medium sized farms up to the national level. Data from 1978 and 1982 also show that the distribution of both direct and indirect 5/ benefits from the program tends to increase as farm size increases (22). In 1982, direct income support to cash grain farms with over $100,000 in sales averaged $17,649 per farm, and their net farm income averaged over $70,000 (table 6). Farms with $40,000 to $99,999 in sales received about $5,510 in direct payments. Cattle, hog, and sheep farms with more than $100,000 in sales received an average of $3,450 in direct payments from commodity programs (mostly feed grains), or roughly 20 percent as much as received by cash grain farms. Direct payments to both livestock and grain farms with less than $40,000 in sales were not sufficient to offset farm losses, and net returns from farming were negative.

5/ Indirect benefits are those which producers realize not from direct payments, but from increased commodity prices.

A recent study for the Senate Budget Committee found that the distibution of direct payments from the wheat, feed-grain, cotton, and rice programs closely reflected production distribution (42). That is, large producers received a disproportionate share of total program payments relative to small producers; and, midsized producers received payments roughly proportional to their numbers.

Table 6--Distribution of income and farm program payments, 1982, by selected farm types

Item	$100,000 and over	$40,000-$99,000	$20,000-$39,000	$10,000-$19,000	$5,000-$9,000	$2,500-$4,999	Less than $2,500
				Thousand			
Cash grain farms	57	120	105	94	77	56	66
				Dollars			
Net farm income	70,667	9,475	(1,419)	(2,926)	(3,273)	(3,500)	(1,803)
Off-farm income	6,418	7,686	11,208	15,194	19,233	21,559	20,122
Total income	77,085	17,161	9,789	12,268	15,960	18,059	18,319
Government payments	17,649	5,542	2,524	1,277	649	339	121
				Percent			
Government payments as a percent of total income	22.9	32.3	25.8	10.4	4.1	1.9	0.7
				Thousand			
Cattle, hog, and sheep farms	60	89	90	116	154	174	322
				Dollars			
Net farm income	63,617	3,978	(2,355)	(3,465)	(3,239)	(2,976)	(1,813)
Off-farm income	10,479	11,146	15,239	18,856	20,950	26,348	15,661
Total income	74,096	15,124	12,884	15,391	17,711	23,372	13,848
Government payments	3,450	1,034	378	129	39	17	3
				Percent			
Government payments as a percent of total income	4.7	6.8	2.9	0.8	0.2	0.1	--

-- = Less than 0.1 percent.

Source: Based on ERS projections of data from 1978 Census of Agriculture, 1979 Farm Finance Survey, and *Economic Indicators of the Farm Sector, 1982*, U.S. Dept. Agr., Econ. Res. Serv.

Cotton producers tended to have the most concentrated distribution of payments, while barley producers had the least. Indirect benefits were estimated to exceed direct benefits by more than 400 percent in 1982. Since larger producers also tended to benefit more from price increases on the commodities they sold, they also tended to receive a larger share of these indirect benefits than small- or medium-sized producers.

Farmers indirectly benefit when acreage control programs or grain storage programs are in effect, reducing market supplies and increasing market prices. These indirect benefits accrue to both participating and nonparticipating farms, but the indirect benefits accruing to participants are reduced when acreage reduction is required as a condition of eligibility for direct program benefits. Data from 1978 show that for a farm of less than 1,000 acres, the income reduction for production foregone was greater than the indirect price enhancement effect (16).

Payment Limitations

The uneven distribution of benefits from deficiency payments has led to a number of proposals to target benefits. Among these are proposals to limit payments; to set target prices, or payment rates, at different levels for different size farms; or to graduate payments, with large payments on the first bushels of production and successively smaller payments on higher levels.

Only the payment limitation has been implemented. Concern that unrestrained payments to farmers would be both inequitable and a drain on taxpayers led Congress to impose payment limits. The first payment limitation was established in 1970 with separate $55,000 annual limits established for wheat, feed grains, and upland cotton. A combined limit was set at $20,000 for 1974-77 for wheat, feed-grain, and upland cotton payments and a separate rice limit was set at $55,000. The combined limitation for total payments for wheat, feed grains, and upland cotton was set at $40,000 for 1978, $45,000 for 1979, and $50,000 for 1981 (with rice included beginning in 1980). A separate rice limitation was continued in 1978 at $52,250 and in 1979 at $50,000 per person.

For 1982-85 crops, the total annual amount of deficiency plus diversion payments that may be received by one person cannot exceed $50,000. This applies to total payments from programs for wheat, feed grains, upland cotton, and rice. Extra-long staple cotton payments were included beginning with the 1984 crops. Total disaster payments are separately limited to $100,000, but nonrecourse loans and storage payments under the FOR are excluded from the limitation. Payments received under the 1983 PIK program were not limited. However, PIK payments for the 1984 wheat crop were subject to the limit.

The payment limit applies to a person rather than a total operation. On farms which are divided among family members, total payments to a family may be higher than the payment limit. A corporation which is composed of several families, on the other hand, is considered one person. The limit does constrain to some extent amounts going to the largest operations. Research indicates that total payments were reduced 1 percent in 1970 and 7 percent in 1982 because of payment limitations. Thus, payment limitations appear to have had only a small effect on the distribution of benefits among producers. However, there are significant regional differences. For example, in Arizona and California, cotton growers received only 60 percent of what they would have gotten with no limit in 1982.

PROGRAM COSTS AND BENEFITS

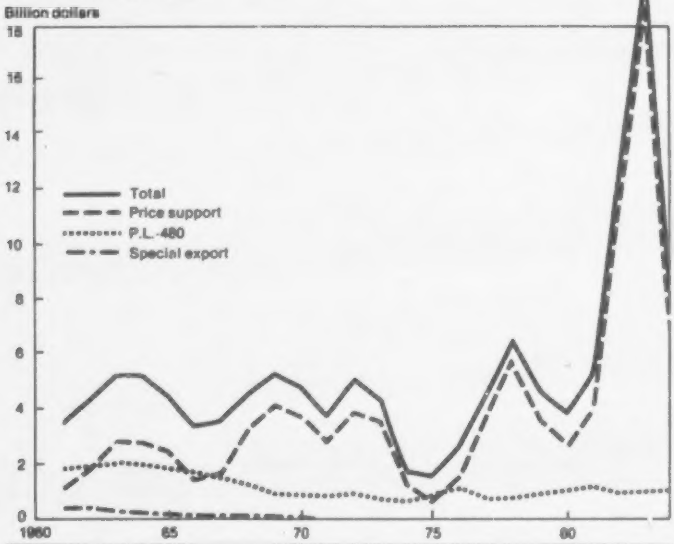
The CCC has an authorized capital stock of $100 million and authority to borrow up to $25 billion from the U.S. Treasury or private lending agencies. Net realized losses of the corporation are reimbursed annually by approriations. These appropriations are used to maintain the CCC's borrowing authority.

Net realized losses are proceeds received from sales of commodities plus repayment of loans, minus recoveries of CCC expenses. Major expenses include the acquisition cost of commodities disposed of from CCC inventories (such as P.L.-480 shipments and payments in kind); costs of storing grain on farms under extended price support loans; direct payments to producers for support, disaster payments, and cropland diversion, if these programs are in effect; interest and storage fees; and general overhead expenses. As shown in figure 19, total CCC budgetary expenditures for price support, P.L.-480 shipments, and related stock management programs have varied considerably over time, and more than doubled in 1982.

An additional cost of the loan program is the cost to consumers, to the extent that commodity prices are kept above market-clearing levels. While no doubt this cost is often positive, it represents a relatively small proportion of the total amount spent on food. It is difficult to place a monetary value on the benefit of a consistently adequate supply of farm commodities at relatively stable prices, which price and income support programs have attempted to provide. Import quotas protect the prices of some commodities (for example, dairy products

Figure 19

Total net CCC budgetary expenditures for price support, P.L.-480, and special export programs



and sugar), but do so "off-budget." Hence, taxpayer cost may be small relative to income transferred to producers. When Government price support programs are effective, consumers and livestock producers pay higher prices for the supported commodities than they would otherwise. Also, taxpayers subsidize the farm sector through reserve storage payments, interest waivers, deficiency payments, and favorable tax treatment (usually larger than transfers through price and income support programs).

When market prices exceed the reserve release price, the flow of benefits is reversed. In concept, consumers and livestock producers are protected against sharp increases in market prices by release of grain stocks onto the market when supplies are relatively tight or when demand is relatively strong. Producers, of course, may not receive as high a price in such situations as they would if stocks were not available to be released onto the market. Also, when prices are above the release level, taxpayers benefit from elimination of storage subsidies, resumption of interest charges, and the increased likelihood that nonrecourse loans will be repaid and commodities will be removed from Government-owned or subsidized storage facilities.

Deficiency Payments

Deficiency payments on program crops have been made in 7 of the 10 crop years since 1974 (table 7). Of the $6.8 billion in total deficiency payments, nearly half was paid to wheat producers. Total deficiency payments depend on the market-sensitive payment rate and the quantity of production eligible for payments.

When target price levels are generally low relative to market prices, as in the case of corn for most of the 1974-83 period, or when loan rates are set at or near target price levels, the program does not lead to large deficiency payments. In contrast to corn, market prices for sorghum and wheat over the 1974-83 period

Table 7--Total deficiency payments by commodity and total, crop years 1974-83

Commodity	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	Total
					Million dollars						
Cotton	0	0	0	0	0	0	0	468	522	431	1,421
Wheat	0	0	0	996	617	0	0	415	476	775	3,279
Corn	0	0	0	0	88	0	0	0	291	0	379
Barley	0	0	0	91	79	17	0	48	60	44	339
Oats	0	0	0	0	0	0	0	0	0	5	5
Sorghum	0	0	0	138	181	63	0	233	64	0	679
Rice	0	0	128	0	58	0	0	22	267	235	710
Total	0	0	128	1,225	1,023	80	0	1,186	1,680	1,490	6,812

Source: Agricultural Stabilization and Conservation Service.

tended to be below the target price more often, despite acreage control programs in effect to buoy market prices. A sluggish world economy, a serious decline in exports, and successive bumper crops made acreage reduction programs necessary in 1982 and 1983 to support prices above minimum loan rates, reduce the level of deficiency payments, and reduce grain stocks. Yet, even with these programs in place, wheat deficiency payments reached $476 million in 1982 and $775 million in 1983. Total deficiency payments on all crops amounted to $1.5 billion in 1983.

CONCLUSIONS

There seems to be increasing concern over U.S. Government price and income support programs. The stated objectives of these programs may be summarized as being an attempt to maintain farm prices and incomes at a reasonable and relatively stable level compared to the nonfarm economy, to assure consumers of an adequate supply of inexpensive farm commodities, and to ease the adjustment process of resources in and out of agriculture.

Based on evidence reviewed in this article, Government programs appear to have increased the average income of commercial farmers above the level that would likely have prevailed in their absence. While income is a difficult concept to measure, it also appears that, with the combination of public policy programs and many other influences over the past 20 years, the general level of current incomes of farm operators has compared favorably with that of nonfarm families, especially since the seventies. However, the income-enhancement effects of nonrecourse loans, stock programs, and deficiency payments tend to benefit producers in proportion to their level of production. That is, both direct and indirect benefits from farm programs tend to increase as farm size increases.

Recent experience indicates that using grain reserves to support farm income in the face of excess productive capacity results in large stock accumulation, especially when market forces and other program provisions tend to encourage increased production and progressively lower real commodity prices. As a direct result of large Government stock accumulation caused by relatively high and rigid nonrecourse loan rates, additional policy tools have had to be used to limit production, such as paid diversion and voluntary acreage set-aside and reduction programs.

The use of acreage reduction programs results in higher prices than would have prevailed without them, and therefore helps to reduce Government stock accumulation and the potential for deficiency payments. However, maintaining prices above market-clearing levels and above average variable cost tends to lead to surplus production, higher Government expenditures for CCC stocks, higher feed grain prices that increase costs for livestock producers, and higher food costs for consumers.

Relatively high loan rates have demonstrated a strong potential to reduce U.S. exports. When world commodity prices fall to the U.S. loan, U.S. commodity programs act to withdraw sufficient stocks from the market to maintain prices at the loan-rate level. This is an incentive for other countries to expand production.

Fluctuating market signals make it more difficult for farmers to efficiently plan and allocate resources for production. A primary objective of target prices and the farmer-owned reserve was to help stabilize farm prices and income, but this has not always been the case. Use of deficiency payments to achieve participation in acreage reduction programs converts them into a tool to raise prices rather than a device to stabilize income when prices are low. Experience with the FOR indicates that potential price variability within the loan rate-release price band set under current programs is not significantly different from that which would prevail in the absence of the FOR.

Both crop and livestock producers and consumers benefit from adequate supplies of food and fiber, and economic efficiency is enhanced by relatively stable commodity prices. However, efficient resource allocation would seem to be challenged if there is a continuous accumulation of grain far in excess of that needed for international food aid, emergency disaster relief, and domestic food security. Recent U.S. experience with stock accumulation plus the present provisions of related Government programs which seem to encourage production at levels that lead to further stock increases, and reduced exports, bring into question what role price and income supports are to play in U.S. farm policy.

APPENDIX

HISTORICAL CRITERIA FOR SETTING PRICE AND INCOME SUPPORTS

Several criteria have been used as mechanisms for setting nonrecourse loan rates, including parity, cost of production, and legislated minimums. Each of these raises conceptual as well as practical problems regarding implementation.

Parity, 1938-73

Parity prices were used as a basis for adjusting loan rates for grain, soybeans, and cotton from 1938 to 1973, although the percentage of parity at which loan rates were set varied greatly. Parity prices were originally defined as the price which gave a unit of a farm commodity the same purchasing power or exchange value in terms of goods and services that the commodity had in the 1910-14 base period. Because parity prices are not adjusted to account for long-term changes in productivity, they do not reflect returns to investment, increased productivity, or the changing structure of agriculture.

In 1948, the parity price formula was revised to make parity prices dependent on the relationship of farm and nonfarm prices during the most recent 10-year period for nonbasic commodities. Basic commodities, including wheat, corn, rice, peanuts, and cotton, as defined by the 1948 act, were to use the higher of the historical formula or the new formula.

Cost of Production, 1973-80

In the Agriculture and Consumer Protection Act of 1973, loan rates and income support prices for wheat, feed grains, and cotton were established at minimum levels by the Congress in relation to costs of production. Setting loan rates above these levels was left largely to the Secretary's discretion.

Legislated Loan Rates and Target Prices, 1981-85

The Agriculture and Food Act of 1981 set specific dollar levels for target prices and loan rates for wheat, feed grains, and rice. And, while flexibility was provided to lower the loan rate by as much as 10 percent per year under specific circumstances, the target price could not be reduced.

The 1981 act included provisions for setting loan rates for soybeans and upland cotton using past movements in market prices. Beginning with the 1982 marketing year, the loan level for soybeans was established at 75 percent of the simple average price of soybeans received by farmers over the preceding 5 years, excluding the high and low years. A minimum soybean loan rate of $5.02 per bushel was imposed, except in situations when the market price did not exceed the loan rate by more than 5 percent, in which case the Secretary could reduce the loan level as much as 10 percent, but to no lower than $4.50 per bushel.

Nonrecourse loan rates for upland cotton were set at the lower of either 85 percent of the 5-year moving average of spot market prices for upland cotton, excluding the high and low years, or 90 percent of the average C.I.F. Northern Europe price of cotton quoted prior to announcement of the loan level. A minimum of $0.55 per pound was imposed. This formula corresponds closely with that introduced for cotton in 1966.

The legislated-minimum loan rates have been above the formula-determined loan rates for both soybeans and cotton over the past several years. Cotton loan rates were formula-determined in 1974-77, 1979, 1981, 1982, and 1985. Hence, the effectiveness of moving-average loan rates has not received a fair test.

Adjustments in Target Price Levels

The 1973 act established explicit target prices for 1974 and 1975 crops of wheat, corn, and cotton, but was less specific regarding other crops. Sorghum and barley target prices, left to the Secretary of Agriculture's discretion, were to be set at a level deemed "fair and reasonable" in relation to corn. The act also specified an adjustment procedure for use in deriving 1976 and 1977 target prices from the 1974 target prices. Under the specified formula, the annual percentage change in the target price would equal the percentage change in the aggregate index of prices paid by farmers, minus the percentage change in a 3-year moving average of yields for the specified commodity. This was an approximation of changes in cost of production, but was subject to the limitation that the yield adjustment not be the cause of an actual target price decrease. The prices paid index was USDA's published index of prices paid by farmers for production items, interest, taxes, and wage rates.

Under the 1977 act, explicit estimates of national average costs of production for individual commodities were considered in evaluating alternative target price levels and in specifying the adjustment formula. The target price levels initially proposed by the administration were based on a total per-unit cost concept that included a 1.5-percent return on current value of land as well as estimated costs for all nonland costs of production. The levels eventually worked out through compromise were somewhat higher than the initial proposal. Concern with the estimated costs of the program and other undesirable implications of full-cost support levels were important factors in arguments against even higher levels.

The basic target price adjustment formula adopted for all crops in the 1977 act relied on estimated costs of production per unit (reflecting costs per acre and yields), but with adjustments limited to variable costs, machinery ownership costs, and general farm overhead costs. Costs of land ownership were explicitly excluded from adjustment formulas because of concern that including a charge for land would result in a spiral of target prices, land values, and costs of production. Based on the formula adopted, the change from the previous year's target price would reflect changes in the 2-year moving average adjusted cost of production. No specific limitation was imposed on reducing target prices with the formula, as was the case in the 1973 act.

The next major comprehensive farm bill was not scheduled until 1981, but two laws affecting target prices were passed before 1981. Under the Emergency Agricultural Act of 1978, target prices could be raised to compensate producers for limiting the use of land. The Agricultural Adjustment Act of 1980 discarded the cost-of-production formula and set 1980 target prices at $3.63 per bushel for wheat and $2.35 per bushel for corn. Target prices for 1981 could be increased (but not decreased) by the Secretary to reflect costs.

The cost-of-production formula for adjusting target prices was abandoned by the Agriculture and Food Act of 1981. Instead, minimum target prices were established for the 1982 through 1985 crops. These minimum levels increased approximately 6 percent per year, reflecting anticipated inflation rates. The Secretary had discretion to set target prices above the legislated minimums to reflect actual changes in per-acre (not per-bushel) production costs; however, there was no explicit formula like that specified in the 1977 act. Since the passage of the 1981 act, however, a decrease in annual inflation rates and increases in Government deficiency payments brought about legislative efforts to reduce target prices below levels set by the 1981 act. The Agricultural Programs Adjustment Act of 1984 set the wheat target price at $4.38 for 1984 and 1985, and maintained target prices for the other crops at their 1984 levels through 1985 (appendix table 1).

Appendix table 1--Minimum target prices in 1981 and 1984 acts

Crop year	Wheat	Corn	Upland cotton	Rice
	Dollars per bushel		Cents per pound	Dollars per hundredweight
1981 act:				
1982	4.05	2.70	71	10.85
1983	4.30	2.86	76	11.40
1984	4.45	3.03	81	11.90
1985	4.65	3.18	86	12.40
1984 act:				
1984	4.38	3.03	81	11.90
1985	4.38	3.03	81	11.90

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SUMMARY

A principal purpose of the federal government's farm programs is to protect crop farmers from losses of income when prices fall. Income support is provided through deficiency payments made to farmers who produce the major crops--corn and other feed grains, wheat, rice, and cotton. The support is provided in proportion to the volume of production of the supported crop. These production-based farm programs are not designed to provide income support on the basis of need. Less than a third of U.S. farms produce any of these crops, and hence more than two-thirds receive no direct benefit from the programs at all. Among those who do benefit, the diversity of crop farming causes the programs to have uneven effects on farm incomes.

THE DIVERSITY OF CROP FARMING

Crop farms vary widely in size and income. In 1982, about 652,000 farms with agricultural sales of $20,000 or more sold about 95 percent of all corn, soybeans, wheat, cotton, rice, and grain sorghum. Families operated most of these crop farms. Sales ranged from $70,000 for small farms to $454,000 for those in the largest size category (see Summary Table 1). Farm incomes also varied, from less than $14,000 on the average small farm to more than $95,000 on the largest. Summary Table 2 shows similar differences among types of farms. Corn and wheat farms had net cash farm incomes that were about average for all crop farms; soybean and sorghum farms had incomes that were below the average; and cotton and rice farms had incomes much above the average. (Net cash farm income measures the cash available to the farm family from farming; it excludes income from off-farm employment, which is often substantial.)

The share of net cash income accounted for by the major crop programs varied among farms. Rice and cotton farms had the largest net gain in income from deficiency payments in 1982, and corn farms the smallest. Except for rice and cotton farms, the smallest farms received very little of their net cash farm income from government payments.

Excerpted from Diversity in Crop Farming: Its Meaning for Income-Support Policy; Special Study. Washington, Congressional Budget Office, 1985. p. xi-xv, 35-42.
Major authors were James G. Vertrees, Andrew S. Morton, Kristin Allen, and Patrick H. Gardner, all of the National Resources and Commerce Department, Congressional Budget Office.

SUMMARY TABLE 1. CHARACTERISTICS OF COMMERCIAL CROP FARMS, BY SIZE OF FARM, 1982

Farm Size a/	Principal Crop Acreage Range (acres)	Farms (thousands)	Average Harvested Acreage All Crops	Average (thousands of dollars) Sales	Average (thousands of dollars) Net Cash Farm Income	Average (thousands of dollars) Value of Farm Assets
Small	1-99.9	244.8	142	70	13.9	389
Medium	100-249.9	221.1	312	98	16.5	677
Large	250-499.9	115.5	78	154	25.3	1,088
Very Large	500-749.9	38.4	919	233	37.9	1,581
Largest	750 or more	32.6	1,790	454	95.2	2,861
Total or Average		652.4	405	123	22.3	804

SOURCE: Congressional Budget Office, from the 1982 Census of Agriculture.

a. Farm size was defined in terms of the crop. Thus a small corn farm harvested less than 100 acres of corn, and corn was either the only crop or was the largest in acreage.

The average rate of return to farm assets also varied widely among farms in 1982 (see Summary Table 2). For most crop farms, debt reduced the overall rates of return. The largest farms tended to have higher rates of return to assets than other farms.

Specialization also varied among farms and influenced their incomes. As measured by the share of total agricultural sales from the principal crop, specialization increased the relative importance of crop-specific farm programs to some farms. Cotton and rice farms were more specialized than other types of farms, which explains in part the greater importance of

SUMMARY TABLE 2. CHARACTERISTICS OF COMMERCIAL CROP FARMS, BY TYPE OF FARM, 1982

Farm Type	Farms (thousands)	Average Harvested Acreage All Crops	Average (thousands of dollars)			Rate of Return to Assets (percent)
			Sales	Net Cash Farm Income	Value of Farm Assets	
Corn	328.3	298	123	21.7	712	3.6
Soybeans	147.7	407	106	17.5	774	2.5
Wheat	136.8	608	123	22.2	939	2.3
Cotton	15.7	668	277	81.3	1,524	8.4
Rice	3.8	632	234	62.7	1,844	4.2
Grain Sorghum	19.9	506	115	12.0	864	1.0
Total or Average	652.4	405	123	22.3	804	3.3

SOURCE: Congressional Budget Office, from the 1982 Census of Agriculture.

government payments to them. Many of the smaller farms, especially corn, wheat, and sorghum farms, relied on livestock, dairy, and poultry sales rather than crop sales for most of their income. These "crop farms" grew grains mainly for feed and received relatively little direct benefit from crop programs. Crop production was concentrated on relatively few farms: about two-thirds of the crop farms in this study, or 18 percent of all U.S. farms, harvested almost 85 percent of all major crops in 1982.

THE INCOME-SUPPORT OBJECTIVE

Income support to crop producers (except in soybeans) is provided mainly by deficiency payments. These payments are made in proportion to production;

they support the incomes of the producers of specific crops, and do so without a test of economic need. Because of the diversity of crop farming, the farm programs have different income effects on farms of different types and sizes. Though no person is allowed to receive more than $50,000 in payments, the benefits are concentrated among a relatively small number of people on larger-than-average crop farms.

Under these circumstances, income support tends to benefit farmers with relatively high incomes while providing little if any help to low-income farmers. In addition, the support tends to accrue to larger-sized farms. A case might be made for separating income support from the crop programs and extending assistance directly to low-income farm families. Raising the incomes of these people would help to keep more families in agriculture and stimulate the economies of rural communities.

The most effective way to raise the incomes of low-income farmers would be through assistance based on a means test. Under a **targeted income maintenance program**, payments would be made to keep family incomes at or above a minimum level. The income floor would take account of family size, off-farm income, farm assets, location, and other factors, including the availability of other public assistance programs. Such a program would not be without its problems of design, implementation, and administration, but it is probably the most effective way to target income support in today's widely diverse agriculture.

Another approach would be to **continue deficiency payments** but to impose tighter limits on them. The present $50,000 maximum could be lowered; alternatively, payments could be denied to farms above a certain acreage or production limit. These options would not transfer more income to low-income farmers than do the current programs: they would only limit total payments to persons on the larger farms. To overcome this problem, support could be scaled inversely so that smaller crop farms (as measured by acreage or units of output) would receive larger deficiency payments than larger farms.

But deficiency payments must inevitably make some use of farm size as a proxy for farm income, which is an imprecise way of matching benefits with need. Some small "crop farms" that would qualify for assistance on the basis of their harvested acreage are in reality among the nation's largest livestock and dairy farms in terms of annual sales and income.

CONCLUSION

A policy of targeting income support to low-income farmers could be combined with the present policy of stabilizing prices and incomes for all farmers. Many farm families do not have chronically low incomes, but they operate under conditions of risk and uncertainty so that their incomes are highly variable. Public policy has long acknowledged this fact. Targeted income support to low-income farmers need not conflict with those policies aimed at stabilizing the incomes of other farmers.

CHAPTER IV

IMPLICATIONS FOR INCOME-SUPPORT POLICY

Income diversity is a key characteristic of U.S. agriculture. The wide variations in net cash income and returns on invested capital among groups of farms of different types and sizes suggest even greater variation among individual farms. This variation raises important questions about income support. To the extent that raising farm income is a goal, low-income families would seem to have a special claim to public assistance. Current farm programs, however, are not designed to target income support to low-income farm families. Rather, they provide support in proportion to crop production, without regard to need. This chapter examines the income support provided under current programs and considers alternative income-support options.

INCOME SUPPORT UNDER CURRENT PROGRAMS

Deficiency payments are the main source of direct income support for producers of corn and other feed grains, wheat, cotton, and rice. Although these crops are grown on about 80 percent of U.S. cropland, less than a third of U.S. farms produce them and hence many farmers are not eligible for this direct income support.

Producers eligible for deficiency payments receive income support in proportion to their production of each crop. A significant fact of U.S. crop farming is the concentration of production: a relatively small number of larger-than-average crop farms produce a disproportionate share of the output. For example, farms in the large, very large, and largest categories harvested the bulk of most crops in 1982: in corn, 36 percent of the acreage was harvested by 12 percent of the farms; in wheat, 49 percent of the acreage was harvested by 21 percent of the farms; in soybeans the figures were 51 percent and 17 percent; in grain sorghum, 55 percent and 18 percent; in cotton, 71 percent and 33 percent; and in rice, 82 percent and 57 percent. 1/ This group of crop farms also receives the largest share of

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1. Rice production appears to be less concentrated than other crops because the larger rice farms are a greater proportion of all rice farms than is the case for other farm types.

direct income support. The concentration of benefits is even greater than the above data would suggest, since many farms produce more than one program crop.

Persons with a production interest in these largest farms receive payments equal to their share of production. Deficiency payments are thus concentrated among a relatively small number who have interests in the larger farms. In 1981, a year of no acreage reduction and therefore of large payments, 6 percent of the participants in the wheat, feed grains, and cotton programs received 57 percent of the total deficiency payments made under these programs. 2/

For any specific farm, the volume of production of each supported crop and the degree of specialization determine the extent to which farm programs can increase incomes. Commercial crop farms generally become more specialized as they increase in size. Rice and cotton farms, which tend to be more specialized than the others, benefit more from the crop programs. Less specialized farms, such as small and medium corn, grain sorghum, and wheat farms, which depend heavily upon sales of cattle, hogs, and milk, derive much less benefit from the crop programs. 3/ Another factor governing benefits is the level of support per unit of production of each crop. As shown in Appendix Table B-1, the level of support is not consistent across crops.

Figure 6 shows the effect of deficiency payments upon average net cash farm income for a typical farm of each type and size receiving payments on all the acreage of its principal crop in 1982. 4/ An average small rice farm getting payments on all its rice acreage would have received about 80 percent of its net cash farm income from deficiency payments, compared with about 5 percent for small wheat farms. Rice and cotton farms, as noted earlier, benefit more from deficiency payments than other farm types. The relative importance of payments tends to grow with acreage harvested in the case of corn and wheat farms, and to decrease in the case of rice and cotton farms, partly because of the $50,000 payment limit.

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2. Unpublished Department of Agriculture data.

3. Small and medium corn, grain sorghum, and wheat farms are more than 50 percent of commercial crop farms. Depending upon farm type, 40 percent to 65 percent of these farms are SIC dairy and livestock farms.

4. Figure 6 shows a greater effect of payments on income than does Figure 1, which takes account of the actual participation rates for each group of farms. In either case, payments have since become more important because of higher per-unit payment rates.

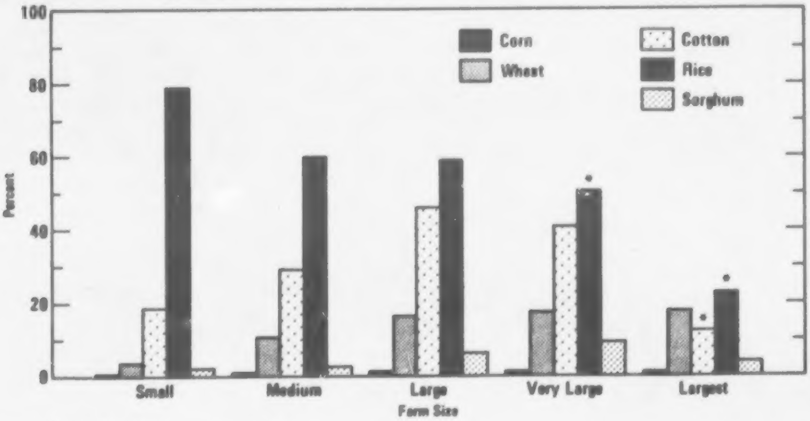
These data demonstrate the uneven income effects of deficiency payments among different types and sizes of crop farms.

THE INCOME-SUPPORT OBJECTIVE

Income-support programs in their present form often benefit farmers with relatively high incomes while providing little if any benefit to low-income farmers. In addition, the support is biased toward larger-sized farms that have a preponderance of the harvested acreage. Most of these larger farms are family farms. However, there is no economic reason to channel support preferentially to them. These inconsistencies suggest several possible responses.

One response would be simply to eliminate deficiency payments. This would have a varying impact, depending on both farm type and size. As Figure 6 shows, the farms most negatively affected would be cotton and rice farms. The elimination of payments would not only reduce farm family incomes, but would also tend to reduce returns to their assets. Under current conditions this would further depress cropland values.

Figure 6.
Estimated Share of Net Cash Farm Income from Deficiency Payments for Crop Farms in 1982



* With $50,000 payment limitation.

Deficiency payments may be thought of as a special "safety net" for crop producers. Eliminating the payments would not have much effect on low-income farm families. To the extent that it did so, they would have access to other federal programs, such as food stamps and the school lunch program. Eligibility for many means-tested programs is determined by family composition, current income, and ownership of assets. For some programs, the last criterion might disqualify some farm families whose incomes are low but who have substantial assets in their farms.

Deficiency Payment Options

Another alternative would be to continue the present system of deficiency payments but to allocate the payments differently, though still on the basis of farm size. In the absence of a means test, however, these options would not be an effective way of targeting income support to low-income farm families.

A Lower Payment Maximum. The current limit on deficiency payments is $50,000 per person--that is, no person can receive more than $50,000 of deficiency (and acreage diversion) payments from all program crops together. Rice and cotton farms are most affected by this limit; because of higher per-acre payment rates, it takes a smaller acreage of rice and cotton than of other crops to reach the maximum amount (see Table 9).

TABLE 9. ACREAGE AT WHICH PAYMENT LIMITS WOULD BE REACHED[a]

Payment Limit (dollars)	Acres			
	Corn	Wheat	Rice	Cotton
10,000	206	278	52	72
20,000	412	555	104	144
30,000	617	833	157	216
40,000	824	1,110	208	288
50,000	1,028	1,389	262	359

a. Based on 1984 programs. The payment per acre is the per-unit deficiency payment (the difference between the target price and the loan rate) times the national average program yield.

One option would be to reduce the maximum, perhaps as low as $10,000. The rationale for this would be that some farmers are receiving more income support than they need. A $10,000 maximum would have the greatest impact on rice and cotton farmers.

Alternatively, deficiency payments could be restricted to small, medium, and large farms, as measured by the acreage harvested of the principal crop, with a maximum of $10,000 for a person. This approach would limit payments to a maximum of about 350 acres of the principal crop, and farmers with larger acreage would be ineligible.

Lowering the maximum payment in either of these ways would reduce or eliminate payments to larger farms. Thus it would tend to make farm income more even, but would not transfer more income to low-income farmers. Moreover, farm size as measured by harvested acreage of the principal crop (or by units of output) is not a satisfactory measure of economic performance, and hence it is inadequate as a basis for determining the need for income support. Another consideration is that a lower payment limit could be circumvented by most farms, simply by letting more persons become eligible for payments by demonstrating that they have a "production interest" in the farm. Assuming that this did not occur, reducing the maximum to $10,000 might save about $4 billion over fiscal years 1987 through 1990. 5/

An Acreage Maximum. Payments might also be reduced by placing limits on acreage (or units of production, such as bushels). Under this approach, the per-unit deficiency payment would be made on a maximum acreage for each program crop. For example, if the maximum was set at the average acreage of large crop farms (about 350 acres for corn, wheat, grain sorghum, rice, and cotton), the limits on payments would range from $12,600 for wheat to $66,850 for rice. 6/

An acreage maximum could be applied in two ways: (1) all persons with production interests in farms would receive payments on acreage not to exceed the maximum; or (2) persons with acreages larger than the maximum would not receive payments. In other respects, an acreage limit would have the same problems as a dollar limit.

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5. See Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options* (February 1985), p. 158.

6. Based on 1984 programs.

Inverse Scaling. A dollar or acreage maximum would reduce the income transfer received by the largest farms, but would not transfer more money to smaller farms. If the objective was to channel more income to small and medium farms, they could be given a larger per-unit deficiency payment than they currently receive. For example, farmers with small and medium wheat farms might receive a payment of $2.00 per bushel, compared with the $1.08 per bushel they now receive. This "inverse-scaling" approach would distribute payments inversely to production volume, with per-unit payments decreasing as farm size increased. It would transfer more income than do current programs to many smaller crop farmers. But it would also extend support to several thousand of the nation's largest farms that harvest relatively small crop acreages. These farms are mainly livestock or dairy farms with sales of $500,000 or more (see Table 8). This inconsistency illustrates the difficulties that would arise from using farm size as a proxy for economic need in targeting income support.

Targeted Income Maintenance

A different response to the problem of low farm incomes would be to target support directly to those most in need. From the perspective of national policy, raising the incomes of such farm families would serve to keep more families in agricultural production and to stimulate rural economies. As shown in Chapter III, many crop farms have relatively low net cash incomes from their farming operations, as compared with crop farms in general; the net cash incomes of many were below the U.S. median family income of $24,000 in 1982. A case might be made for giving direct assistance to low-income farm families, although this would mean treating them differently from their nonfarm counterparts.

The most effective way to target income support to low-income farm families would be through a means test, independent of their production. Those qualified by the means test would receive payments to keep their family income at or above a minimum level. The minimum income could be scaled according to family size, location, and other factors, including the availability of other public assistance programs.

All sources of income would need to be considered, because many families that operate crop farms also have significant off-farm income. (In 1982, farms with sales of $20,000 to $39,999 received virtually all their net income from off-farm sources, and those with sales of $40,000 to $99,999 earned about 65 percent of their net income off the farm. Even farms with sales of $100,000 to $199,999 received about a third of their income from off-farm sources.) [7] Moreover, the assets of the farm business would have to be taken account of in a way that would not exclude low-income families while at the same time prohibiting payments to wealthy families.

This approach is not without problems. A means-tested program would not be acceptable to many farm families accustomed to being paid on the basis of their production. Further, to define a "farm family" for the purposes of such a program would in itself be difficult. Another difficulty would lie in determining income. A farm family's income--to the extent that it is earned from farming--is both an earned income and a return on the assets invested in the farm business.

Despite these problems, a means-tested income maintenance program would be an effective way of directing income support to low-income farm families--probably the only way of targeting income support in today's widely diverse agricultural sector. The feasibility of this approach was demonstrated by experimental rural income-maintenance programs in the late 1960s and early 1970s. [8]

MESHING INCOME SUPPORT WITH OVERALL POLICY

Many farm families who do not have chronically low incomes have highly variable incomes because of the nature of agriculture. Farm markets have always been volatile, for a number of reasons: the unpredictable effects of weather and biological factors on production; the time lags between farmers' production decisions and their ensuing marketing decisions; and the relatively great fluctuations of prices in response to changes in supply and demand. Commercial farmers operate in a risky environment; they face a high degree of uncertainty as to next year's prices and incomes. Public policy has long acknowledged this risk and uncertainty, and one purpose of the crop programs is to stabilize agricultural prices and incomes.

A policy of targeting income support to low-income farmers need not conflict with the overall policy of stabilizing prices and incomes. The latter end could be pursued by price supports that take account of market conditions--particularly conditions in export markets, where prices have sometimes been lower than in the domestic market. Flexible price supports could be coupled with a targeted income maintenance program. Or the latter could be combined with income stabilization measures such as farm revenue insurance or a program fashioned after Canada's Western Grain Stabilization Program. 9/

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[7] U.S. Department of Agriculture, *Economic Indicators of the Farm Sector: Income and Balance Sheet Statistics, 1983* (September 1984).

[8] See U.S. Department of Health, Education and Welfare, *Rural Income Maintenance Experiment, Summary Report* (November 1976).

Through targeting, income support would be separated from the effort to stabilize prices. However, eliminating or reducing deficiency payments might discourage the largest producers from participating in reduced acreage programs, which have been an important tool of supply management. Withdrawal of the largest producers would decrease the already limited effectiveness of voluntary supply management.

CONCLUSION

The great diversity in American agriculture means that programs concerned mainly with stabilizing incomes on the basis of production do not offer much assistance to low-income farm families. Such families could be helped directly through a means-tested program that would target income support to low-income farm families. Another alternative would be to modify the current deficiency payment program so as to channel payments to smaller farms, but this would not help all who need assistance and it would extend support to some who do not need it.

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9. See Congressional Budget Office, *Farm Revenue Insurance: An Alternative Risk-Management Option for Crop Farmers* (August 1983), and *Canada's Western Grain Stabilization Program: An Option for U.S. Policy?* (November 1984).

CANADA'S WESTERN GRAIN STABILIZATION PROGRAM: AN OPTION FOR U.S. FARM POLICY?

Special Study

The Congress of the United States
Congressional Budget Office

November 1984

PREFACE

Among the issues the 99th Congress will consider in reauthorizing the Agriculture and Food Act of 1981 are possible approaches to stabilizing farm incomes. At the request of the Senate Agriculture, Nutrition, and Forestry Committee, this special study was prepared to examine Canada's Western Grain Stabilization Program as an option for U.S. farm policy. In keeping with the Congressional Budget Office's mandate to provide objective and nonpartisan analyses of issues before the Congress, no recommendations are offered.

The author is James G. Vertrees. The paper was prepared in CBO's Natural Resources and Commerce Division under the supervision of David L. Bodde and Everett M. Ehrlich. Francis Pierce edited the manuscript, and Kathryn Quattrone prepared it for publication.

Rudolph G. Penner
Director

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CHAPTER I. SUMMARY

As the Congress considers reauthorization of the 1981 Agriculture and Food Act, it may be helpful to review alternative approaches to the present price support programs. In particular, programs aimed at stabilizing farm income rather than commodity prices appear worthy of consideration. This paper reviews one such program, Canada's Western Grain Stabilization Program (WGSP), and its implications for domestic farm policy.

THE WESTERN GRAIN STABILIZATION PROGRAM

The WGSP was started in 1976 to provide greater cash flow stability for crop farmers in western Canada. It is designed to protect all producers' net cash flow collectively rather than ensure stable net cash flow for individuals. Stabilization payments are made to farmers when annual net cash flow--the difference between total sales receipts for the seven eligible crops and the total cash costs of producing them--falls below the average for the previous five years. A participating producer receives payment in proportion to the levies he has paid into a stabilization fund. The annual levy is currently 1.5 percent of his crop sales, and the Canadian government contributes another 3.5 percent of all producers' sales to the fund.

The WGSP has proved to be a workable program. Participating producers have received payments twice in the 1976-1983 period, in 1978 and 1979. Since 1979, however, rising sales volumes have tended to offset falling prices and rising production costs. Thus annual net cash flow has remained above the five-year average and payments have not been triggered even though some crop producers have experienced financial distress. Accordingly, the Canadian government recently legislated changes in the WGSP to make it more responsive to producers' needs. The most important change is a second payout trigger based on net cash flow per metric ton of crop sales in addition to the original trigger of total net cash flow.

U.S. FARM POLICY

Farm policy in the United States is influenced by two principal goals: (1) to stabilize farm prices and the incomes that farmers receive; and (2) to raise farm incomes above the levels that would prevail under market conditions alone.

The goal of income enhancement has dominated farm policy in recent years, somewhat in contrast to the trend toward more market-oriented farm programs that began in the 1960s. But many of the programs used for income enhancement--such as farmer-owned reserves and nonrecourse loans, in conjunction with reductions in planted acreage--are best suited for stabilizing prices rather than enhancing incomes. As a result, the farm programs have become quite costly to taxpayers: price-support outlays reached a record $18.8 billion in fiscal year 1983 and under current policy would average $11.8 billion per year through 1989. At the same time, these programs appear less able to influence farm economic conditions than in the past.

This study examines the Canadian stabilization program as a possible approach to stabilizing the incomes of U.S. crop farmers. The study concludes that crop-specific net cash flow programs could work, if supported by farmers, the Congress, and the Executive. They appear to be technically feasible, and they would probably require lower federal outlays than do current programs that include deficiency payments. While protecting producers in the aggregate against declines in income, they would not lessen the incentives for individuals to operate efficiently.

On the other hand, this kind of program is designed to stabilize rather than to increase long-term farm income, and hence it implies a market-oriented approach to farm incomes that would accept the average outcome that the markets provide. Such a program would require both the Congress and the Executive Branch to consider a corresponding change in overall farm policy--one that would seek to stabilize farm income without attempting to raise prices above market-clearing levels.

CHAPTER II. THE WESTERN GRAIN STABILIZATION PROGRAM

In Canada, government intervention in agriculture takes several different forms. Both the federal and provincial governments have programs to stabilize returns to the farm sector. Canadian policy generally emphasizes stabilization of income (or net margins) for agricultural goods that are exported, and price stabilization for those sold primarily on the domestic market. 1/ In addition, most major crops are covered by all-risk crop insurance; this is a joint program of the federal and provincial governments, with farmers paying part of the costs.

The main objective of the Western Grain Stabilization Program is to protect crop producers in the Prairie Provinces--Alberta, British Columbia (Peace River area), Manitoba, and Saskatchewan--from uncertainty and variation in net cash flow resulting from short-term price fluctuations, reductions in marketings, and increases in production costs. The WGSP offers group protection to producers, but it does not aim to ensure stable returns for individuals. In this sense it is not insurance. 2/ It covers producers of the major crops of western Canada--wheat, barley, oats, rye, flax, rapeseed, and mustard seed. 3/ These crops provide about 60 percent

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1. Price stabilization programs are authorized by the Agricultural Stabilization Act of 1958. They apply to corn, soybeans, oats, and barley grown outside of the area covered by the Western Grain Stabilization Program, and to slaughter cattle, hogs, sheep, and industrial milk. Under these programs, payments are made when the final producer price falls below 90 percent of the previous five-year average adjusted for changes in cash production costs.

2. The group of participating producers transfer risk to the government and they pay a portion of the costs of the "insurance" against net cash flow losses. But the WGSP is not a pure insurance program that affords individual protection against cash flow losses by pooling risks across a large number of similarly exposed individuals. With pure insurance, pooling allows the risk for a group as a whole to be estimated with a fair degree of accuracy, even though each individual's exposure to loss may be quite unpredictable.

3. Wheat accounts for about two-thirds of the total crops marketed under the WGSP, and barley for about a quarter.

of farm cash receipts in the Prairie Provinces, and the crop industry is central to the regional economy.

The WGSP is intended to mesh with a market-oriented agricultural policy and to contribute to income stability and efficiency in resource allocation. Crop producers make production decisions based upon expected market returns, but if these expected returns are not realized in the short run, the WGSP protects their net cash flow. The emphasis of the WGSP is thus on stabilizing income rather than enhancing it. A single program for all the major crops was considered sufficient since in western Canada these crops are fairly interchangeable in production. It was also favored from the viewpoint of efficiency, since crop-specific programs could have direct and undesirable effects on resource allocation. (For example, expected payouts under a wheat program could encourage wheat production at the expense of other crops.)

HOW THE WGSP WORKS

The key element in the WGSP is the stabilization payment to participating producers. This is determined through a series of steps, the first of which is calculation of the stabilization payment for all producers.

- First, **net cash production expenses** [4] for the seven covered crops sold commercially are deducted from **total sales receipts** (excluding stabilization payments) to give **net crop proceeds**, as shown in Table 1.

- Second, the resulting **net crop proceeds** are adjusted to reflect production actually sold off-farm by eligible producers (net of on-farm uses such as livestock feed) to give total **net cash flow.**

- Third, the **net cash flow** is compared to the five previous years' **average net cash flow.** If it is smaller than the average, the difference is the **potential stabilization payment.**

- Lastly, the **stabilization payment** is calculated by multiplying the **potential stabilization payment** by the **participation ratio**--the percentage of all crop producers participating in the WGSP.

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[4] Production expenses each year are based on a farm expenditure survey conducted by Statistics Canada. Eligible cash production expenses include seed, fertilizer, pesticides, hired labor and custom work, machinery operation, taxes, utilities, irrigation, insurance, and interest (only on operating capital).

TABLE 1. CALCULATION OF WESTERN GRAIN STABILIZATION PROGRAM PAYMENTS (In billions of dollars)

		1977	1982
(1)	Total sales receipts for all crops	2.870	5.852
(2)	Total cash production expenses	1.454	3.120
(3)	Net cash production expenses for crops sold off-farm--line (2) adjusted a/	1.076	2.236
(4)	Net crop proceeds--(1)-(3)	1.794	3.526
(5)	Net cash flow--line (4) adjusted for eligible sales of actual producers b/	1.211	2.246
(6)	5-year average net cash flow	1.365	1.834
(7)	Potential stabilization payment--(5)-(6)	0.154	None c/
(8)	Participation ratio--proportion of total producers participating	0.740	0.770
(9)	Actual stabilization payment--(7) x (8)	0.115	None

a. Total cash production expenses are multiplied by the percent of total crop production sold off-farm.

b. Eligible sales exclude the value of crops sold above the maximum eligible receipts level ($60,000 since 1982). In 1977, eligible sales were about 74 percent of total sales. In 1977, actual producers (those who qualified for the WGSP) accounted for about 92 percent of total sales. Thus, in 1977 net cash flow was about 68 percent (.74 x .92) of net crop proceeds.

c. No payment was made in 1982 because net cash flow was larger than the five-year average.

After the stabilization payment for all producers has been determined, each participating producer's share is calculated. This is based on the participant's levy--contribution to the stabilization fund--independent of his net cash flow.

Participant's Total 3-Year* Levies	/	Total of All Producers' 3-Year* Levies	X	Total Stabilization Payment	=	Participant's Payment

* Current and past two years.

Under this system, an individual farmer's payment is triggered by industry results, not by his specific situation. His net cash flow may thus be above or below his five-year average, even though the opposite holds for the industry. If he has poor yields, for example, his net cash flow may be lower than his five-year average. On the other hand, larger acreages and good yields may raise his net cash flow above his five-year average.

Payments for 1977 and 1978 were made to producers in two installments in April-May and October of the following year. The delay resulted from the fact that production cost data are not complete until about a year after harvest. The partial payment in April-May was based on the best estimate of the total payment.

Participation

Participation in the WGSP is voluntary--up to a point--for eligible producers. Most producers were automatically enrolled in the WGSP at its inception in 1976, and were permitted to withdraw before December 31, 1978. Since 1976, new producers have been automatically enrolled; they may withdraw before December 31 of their third year of participation. In the future, producers may opt out of the program on the tenth anniversary of the WGSP in the 1986-1987 crop year, and thereafter in 1996-1997. Those who withdraw are given one opportunity to rejoin, but only as conditional participants for a three-year period during which they receive 90 percent of any stabilization payment. Eligible producers include qualified farming companies, cooperatives, and partnerships. Non-Canadians and landlords are excluded from participation.

A participating producer pays a levy only on the first $60,000 of crop sales each year. This maximum eligible level of receipts is also the maximum on which he can receive a stabilization payment. Thus, a producer with crop sales of $60,000 or less is fully covered--his net cash flow on all sales is protected. On the other hand, a producer with sales more than $60,000 is covered on less than his total sales. The maximum receipts level was $25,000 until 1979, when it was raised to $45,000 and remained there until 1983.

Stabilization Account

Crop producers and the Canadian government make annual levy payments into a stabilization account. The maximum total levy from these two sources is 7 percent of eligible crop sales receipts. Initial estimates were that a total levy of 6 percent of crop sales receipts would result in a workable, self-supporting program over a 20-year period.

The current producer levy is 1.5 percent of eligible crop sales receipts. In 1984, this meant that the maximum levy for an individual was $900--1.5 percent of the $60,000 maximum eligible level of receipts. The producer levy is only on commercial sales, and thus excludes farm-to-farm sales and crops used on-farm. The levy is tax deductible, and stabilization payments are taxable income. The government contribution is now 3.5 percent--two percentage points more than the producer levy rate.

When the stabilization account contains a surplus, accumulated funds earn interest that is credited to the account by the government. (The interest rate is 90 percent of the average yield of 3-month Canadian Treasury bills.) But if payments are made in years when the fund is in deficit (as in 1979), the government loans funds to the stabilization account. Such loans are to be repaid with interest from the account when it returns to a surplus position.

The producer levy, which was set at 2 percent of sales receipts, can be changed in the following ways. If the cumulative interest credited to the account in a consecutive two-year period is more than one-third of the total levy paid by producers and the government in that period, the producer levy is reduced to 1.5 percent. (As it was in 1984.) If the same results occur for an additional two-year period, the producer levy is reduced to 1 percent, the minimum level. In contrast, if the cumulative interest charged against the account in a consecutive two-year period is greater than one-third of total payments into the account for that period, the producer levy is increased to 2.5 percent, the maximum level. In either case, the government contribution is two percentage points above the producer levy.

Administration

The Minister of State responsible for the Canadian Wheat Board has legislative and policy responsibility for the WGSP. Agriculture Canada (the Canadian Department of Agriculture) administers the program through its Western Grain Stabilization Administration (WGSA). The WGSA is part of the Farm Income Services Branch, which administers the programs authorized by the Crop Insurance Act and the Agricultural Stabilization Act.

Supporting Institutions

A number of organizations facilitate the operation of the WGSP. Grain companies and dealers licensed by the Canadian Grain Commission must report all purchases of the eligible grains to the WGSA and remit all levies deducted from the sales receipts of participating producers. These companies handle the bulk of the grain marketed in Western Canada. In addition, a secondary group of commercial grain traders, not licensed by the Commission, have agreed under contract to report all purchases of eligible grains. This group is given the option of collecting the levy. In cases where these designated purchasers elect not to collect the levy, producers are given the option to make voluntary contributions to their accounts. All licensed grain companies, dealers, and designated purchasers are compensated by the WGSA for their services.

A related institution is the Canadian Wheat Board (CWB), the sole marketing agent for most of the crops covered by the WGSP. The WGSA depends heavily upon the CWB permit book system, which identifies each producer.[5] The CWB also collects and remits levies on adjustments or final grain payments to participating producers.

PERFORMANCE OF THE WGSP[6]

Although not without problems, the WGSP has proved to be a workable program for stabilizing net cash flow in the crop economy of western Canada.

Participation

Participation over 1976-1983 has included about 75 percent of crop farmers in the Western Provinces. Although producers cannot opt out after they have been in for three years, new CWB permit holders are automatically enrolled in the program and have the option of not remaining. The fact that about 80-85 percent of new permit holders have elected to stay in the WGSP in the past three years, a higher proportion than when the program began, suggests that participating farmers generally like the program.

Participation does not vary significantly among producers of different size. When crop producers are grouped into crop sales classes, the distribution of participants is approximately the same as that of producers. For example, about 82 percent of 1981 participants had crop sales of $60,000 or less, as did producers in general. Approximately 6.5 percent of

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5. The Appendix provides a discussion of the Canadian Wheat Board.

6. This section draws upon information provided by Agriculture Canada (the Canadian Department of Agriculture) and the Office of the Minister of State.

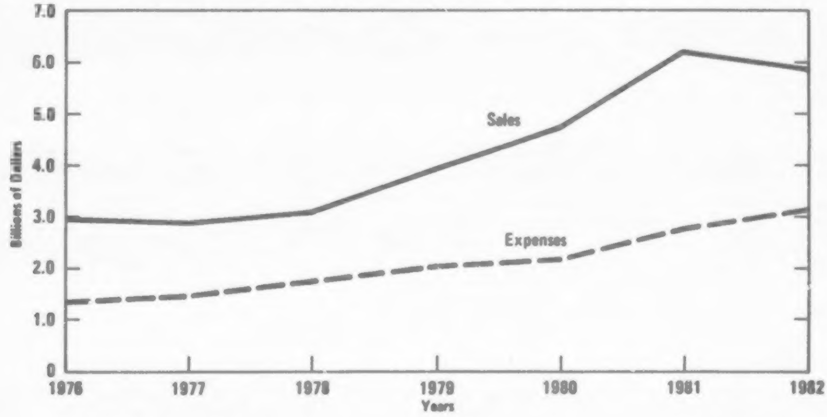
both participants and producers had sales of more than $100,000. These data suggest that the $60,000 maximum eligible receipts level is not a major factor influencing participation of larger producers.

Stabilization Payments

Crop sales and production expenses increased over the 1976-1982 period (see Figure 1). Average grain prices fell in 1977 and 1978 and then increased until 1982 when they again declined. The increasing volume of sales offset much of the impact of any decreases in prices and increases in production costs. As shown in Figure 2, net cash flow fell in 1977 and 1978, triggering payments. But in 1982 the decline in net cash flow did not trigger payments because net cash flow was above the five-year average. A rising sales volume over the period is estimated to have reduced potential payments by about 30 percent.

Figure 1.

Western Grain Stabilization Program:
Crop Sales and Cash Production Expenses

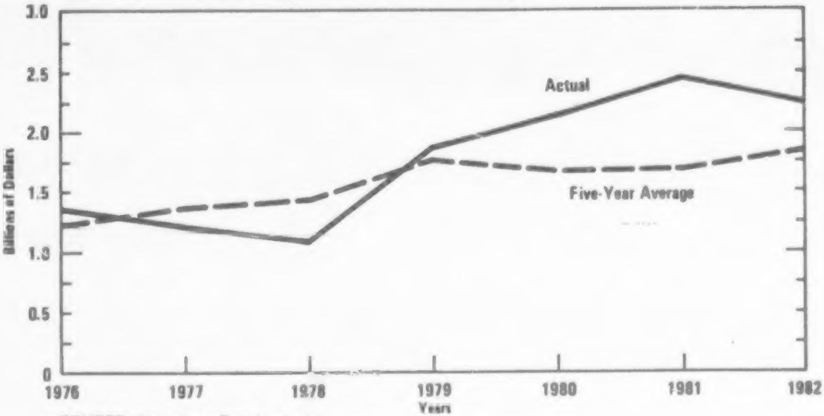


SOURCE: Agriculture Canada reports.

The payments for the 1977 and 1978 crops limited the downturn in net cash flow (see Figure 3). Since the payments were made in the following year, they had no effect on 1977 net cash flow, which fell 11 percent from the previous year. But they caused 1978 net cash flow to remain constant

Figure 2.

Western Grain Stabilization Program: Net Cash Flow, Actual and Five-Year Average

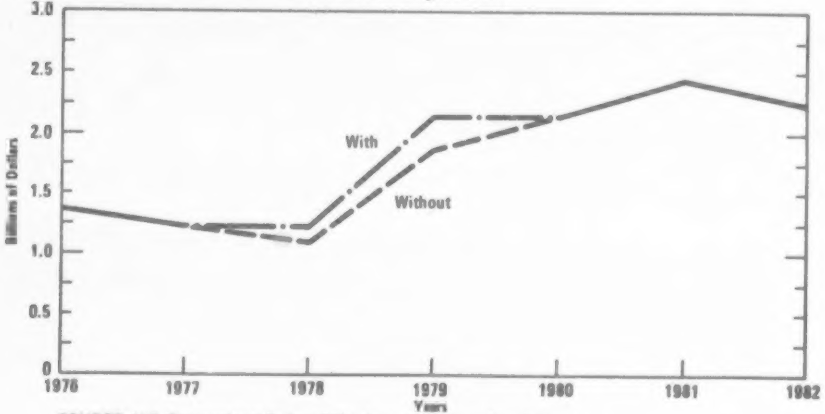


SOURCE: Agriculture Canada reports.

NOTE: Based on maximum eligible receipts level in effect each year.

Figure 3.

Western Grain Stabilization Program: Net Cash Flow With and Without Payments



SOURCE: U.S. Congressional Budget Office from Agriculture Canada reports.

NOTE: Based on maximum eligible receipts level in effect each year.

instead of falling by 9 percent, and increased 1979 net cash flow by five percentage points above what it would otherwise have been.

If the payments had been made in the program year, net cash flow would have dropped only 3 percent in 1977 and would have increased by 2 percent in 1978. The point is that the payments did raise net cash flow, but not in the year the crops were harvested. As a result, the payments had little effect on the year-to-year variability of net cash flow as compared to a situation of no payments.

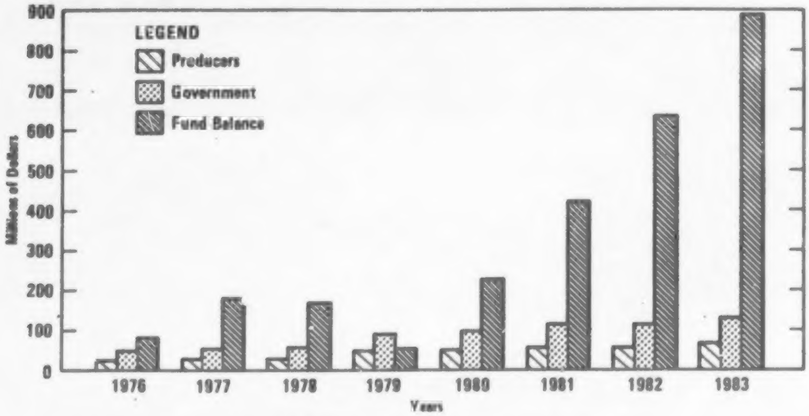
Over 1976-1983, a participating producer would have received payments larger than his total levy (excluding forgone interest). The government estimates that a producer participating in the program and making the maximum contribution through the end of 1983 had paid total levies of $6,300 and had received payments of $6,894. The payments were made in 1977 and 1978, however, and since then the producer has paid $4,800 in levies and has received no payments. If this representative producer had average sales of $25,000 in 1977 and 1978, the payments increased his net cash flow by about 15 and 30 percent, respectively. On the other hand, if the producer had average sales of $50,000 above the then existing maximum eligible receipts level, the relative effect on net cash flow was less.

The distribution of payments is influenced by the maximum eligible receipts level. The group of producers with average sales up to the maximum eligible receipts level receive a greater proportion of the total stabilization payment than it would if the level was larger or was eliminated. Thus, the maximum eligible receipts level skews payments to producers with sales less than $60,000, approximately 82 percent of all producers.

Stabilization Account

The total contribution to the stabilization account was $1,048 million over 1976-1983. The government contribution was $699 million and the total producer levy was $349 million, about $20 million less than total payments of $368 million. The stabilization account had a very small balance at the end of 1979 after two years of payments (see Figure 4). The account had a balance of $884 million at the end of 1983, including cumulative earned interest of $204 million.

Figure 4.
Western Grain Stabilization Program: Producer and Government Contributions and Fund Balance, Including Earned Interest



SOURCE: U.S. Congressional Budget Office from Agriculture Canada reports.

Coverage

In developing the WGSP it was judged that 90 percent of all commercial grain sales should be stabilized. The rationale for this level of coverage was to protect the majority of producer incomes but not to provide an incentive for expansion. The tool to achieve this 90 percent target is the maximum eligible receipts level per producer--the $60,000 limit on the value of crop sales covered by the WGSP. In theory, 90 percent of eligible commercial crop sales would be stabilized if all producers were covered by the maximum eligible receipts level. The maximum eligible receipts level did not, however, increase fast enough to cover higher prices, yields, and production so that in 1981 only 67 percent of crop sales were covered. In 1983 the higher maximum level ($60,000) covered 81 percent of total crop sales.

RECENT CHANGES

By and large, the WGSP has been accepted by producers and has helped to keep net cash flow from falling sharply. Nevertheless, producers have been dissatisfied with certain aspects of the program. In particular, rising sales volumes have offset the impact of falling prices and increasing production costs. As a result, no payments have been triggered even though some producers have experienced financial stress. At the same time, the stabilization account has shown a growing balance.

In response to these concerns, the Parliament passed a number of amendments to the Western Grain Stabilization Act in late June 1984, designed to make the WGSP more flexible and responsive to the needs of producers. The government estimates that these changes will cause a stabilization payment for the crop year ending July 31, 1984, and for the following 1984/1985 crop year. The key changes are as follows.

Per-Unit Payout Trigger

Before the June legislation, payout was calculated solely on the basis of aggregate net cash flow. Now there will be a second payout trigger--net cash flow per metric ton of eligible sales. This will also operate on a five-year average. Its purpose is to make the program more sensitive to price and cost variation during periods of increasing marketing volumes. It is more sensitive to price declines and reduces the impact on payout calculations of increasing volumes. The first payout trigger will be maintained so that continued protection is provided against volume decreases. The actual payout in any year will be the larger amount resulting from either method of calculation.

Crop Year Basis

The WGSP has been operated on a calendar year basis. This means that final stabilization payments were not made until 10 months after the program year ended (October of the next calendar year). Since June 1984, the program has been on a crop year basis--August 1 to July 31. Sales receipts are to be measured on this crop year basis while production costs will continue to be based on the calendar year. This approach will mix crop year receipts with calendar year production expenses, but since production expenses for the 1983/1984 crop (August 1 to July 31) were incurred in calendar year 1983, and receipts were received in both 1983 and 1984, this method should bring into closer relationship cash receipts and production costs. Moreover, stabilization payments will be made within three or four months after the close of the crop year, which will be much more timely than before.

Option to Withdraw

Previously, producers had the option to withdraw from the WGSP in their first three years of participation. They will now have an additional opportunity to withdraw every ten years, beginning on the tenth anniversary of the program in 1986-1987.

CHAPTER III. APPLICATION IN THE UNITED STATES OF CANADIAN-STYLE STABILIZATION PROGRAMS

In assessing whether net cash flow stabilization programs would be feasible for the United States, it is necessary to address two problems: how to mesh net cash flow programs with current policies and programs; and the technical adaptations that would be necessary for a workable program.

INTEGRATION WITH CURRENT POLICIES AND PROGRAMS

Currently, federal support of the farm sector follows two principal approaches. The first approach is to stabilize market prices; the principal instruments for this are the nonrecourse loan program and the farmer-owned grain reserve. The second approach seeks to increase farm income through acreage reduction programs, which reduce the amount of farm commodities that reach market and thereby raise prices, and through deficiency payments made directly to farmers when commodity prices fall below target prices. 1/

A cash flow stabilization program patterned after that now used in Canada would combine elements of both these approaches. Its primary intent would be stabilization, but it would stabilize aggregate income rather than prices. Such an income stabilization program implies an overall farm policy that is market oriented, aimed at assuring producers stable incomes from the production and marketing of competitively priced products. If U.S. farm policy continues its long-term transition toward a greater market orientation, it could accommodate a net cash flow stabilization program.

A program aimed at aggregate protection for farmers' net cash flow implies accepting a greater role for the market in determining long-run commodity price and farm income levels. This would be more efficient from an economic point of view since it would provide price incentives to direct the flow of resources into and out of agriculture. Although such a program would not contribute to the present goal of enhancing farm incomes, that goal could be pursued through other transfer programs.

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1. For a more complete analysis of current farm support programs, see Congressional Budget Office, Crop Price Support Programs: Policy Options for Contemporary Agriculture (February 1984).

Putting such a policy in place would require some adjustments in current programs. First, price supports--nonrecourse loan rates--should be made flexible so as to be responsive to long-run market conditions. Second, acreage reduction programs could be eliminated, or used in a manner consistent with stabilization rather than income enhancement. Third, deficiency payments might well be eliminated, or targeted to producers with the greatest need.

TECHNICAL REQUIREMENTS

The development and implementation of a net cash flow stabilization program would require substantial planning. The basic technical requirements are relatively straightforward and do not seem demanding in terms of additional costs and institutions. Nevertheless, some important technical problems would arise.

Crop-Specific Programs

In Canada a single net cash flow stabilization program covers seven crops. A multi-crop program was developed, as opposed to crop-specific programs, because the several crops have similar production expenses and are, to a relatively high degree, substitutable for each other. Also, a single program was considered sufficient for the purpose of stabilizing the prairie economy. But in the United States the major crops--corn, wheat, soybeans, rice, and cotton--have different production costs and are produced in geographic areas that are much more dispersed. Also, U.S. producers tend to specialize.

From the U.S. perspective then, it would be necessary to have a separate program for each major commodity: corn, wheat, cotton, rice, and so on. Separate programs would raise the problem of making each program neutral in its effect on resource allocation. This is important because many producers grow more than one crop, or have the option to do so. Designing the programs so that they would not offer producers incentives to alter their production plans based on expected program returns would be a challenge. The problem could be minimized, however, by establishing identical levels of cash flow protection at less than 100 percent.

Coverage

The level of total coverage as well as the coverage afforded to producers of different size would be important issues in putting an income stabilization program in place. Under the Canadian program producers with sales above the maximum eligible receipts level do not have full protection. This "cap" is used to limit the coverage of large producers while still trying to achieve an overall coverage of 90 percent of industry sales. This means that producers with sales equal to or less than the cap have full protection and receive a larger share of total payments than they would if the cap were set higher. From a perspective of income stabilization and efficiency there are no persuasive reasons for limiting the participation of larger producers. However, the history of farm policy in the U.S. suggests that the cap would probably be set below total industry sales, thus providing only partial coverage for the largest farm operators. Alternatively, the cap could be set on a pro rata basis--limiting each producer's coverage to some proportion of his total sales. This would leave small farmers with the same proportional exposure as large farmers.

Information

In the simplest terms, two levels of information would be required, national and individual. Data at the national level would include: the volume of crop sales to primary buyers; national average farm prices; and estimated cash production costs per planted acre. This information would be used to calculate total crop sales receipts, cash production costs, and net cash flow. Such data are now collected by Department of Agriculture agencies--the Statistical Reporting Service (SRS) and the Economic Research Service (ERS). On the level of the individual producer, the necessary data would include the volume of off-farm sales to primary buyers and prices received. National average prices could be used in lieu of actual prices received to estimate sales revenues for individuals, and hence to determine each producer's eligibility, levy, and stabilization payment.

Information requirements could be simplified, however. For example, producers could contract with the government for program participation in advance of each crop year. The contracts would provide coverage for a specified volume of sales, on which a levy would be paid. This would provide some early warning as to the extent of the government's obligation. Producers would have to provide verification of their actual sales only if the payments were triggered.

Administration

The Agricultural Stabilization and Conservation Service could administer net cash flow protection programs. This agency, which manages current price support programs, could handle the tasks of determining producer eligibility, calculating and collecting producer levies, and making producer payments.

Financing

The Commodity Credit Corporation (CCC) could be the financing mechanism. Producer levies, government contributions, and stabilization payments could be readily accounted for by setting up commodity stabilization accounts for each crop program within the CCC fund.

CONCLUSIONS

There appear to be no insurmountable technical constraints to the use of net cash flow stabilization in U.S. agriculture. Even though the U.S. government is not directly involved in the marketing of grain as is the Canadian government (see Appendix A), the current institutional arrangements in this country appear compatible with cash flow stabilization. The central issue is whether such a program could mesh well with the goals of U.S. agricultural policy.

From a producer's viewpoint, a net cash flow stabilization program would mean protection against unforeseen changes in industrywide prices, sales volume, and production costs that might cause net cash flow to fall below average. Such a decline in industrywide net cash flow could trigger payments to participating producers. At the same time, an individual's net cash flow could fall because of unique circumstances that would not reflect industrywide changes and would thus not trigger a payment. For that reason, an individual producer would have incentive to continue to manage risks through crop insurance and forward pricing in cash or futures markets. He would still have to operate efficiently and decide how to deal with production and marketing risks.

For taxpayers, a net cash flow program would have the advantage of shifting a portion of stabilization costs to producers. While the budgetary costs of net cash flow programs cannot be estimated precisely, it would be reasonable to expect savings, especially if deficiency payments were eliminated or targeted to a limited set of the most needy farmers.

In summary, a cash flow stabilization program similar to that in Canada appears attractive in concept as one component of a market-oriented farm policy. If the Congress wished to pursue this concept further, it could consider authorization for studies aimed at program design and implementation. If these proved positive, a pilot cash flow stabilization program might be put in place before moving to the full program.

APPENDIX. THE CANADIAN WHEAT BOARD

The mandate of the Canadian Wheat Board (CWB) is to maximize returns to Western producers from grain sales; to provide prairie grain producers with price stability; and to ensure that each grain producer gets a fair share of the available markets each year. 1/ The CWB is the sole marketing authority for wheat, oats, and barley sold for export and for these grains sold domestically for nonfeed use. Public and private buyers, processors, and retailers can buy these grains only from the CWB. Thus, sales of the CWB are one of two kinds: those made directly to other governments' buying agencies, or those made to private trading firms. For other crops covered by the WGSP (rye, flax, mustard seed, and rapeseed), the marketing system is similar to those in the United States.

The grain pricing system includes two payments. The initial payment is made when a producer delivers grain to the elevator. It is established by Order-in-Council (an executive order) prior to the crop year. This price, less handling and transportation costs to terminal ports, is a guaranteed floor price.

The second payment may be made after the crop is sold by the CWB. Total receipts from grain sales are pooled into one of six grain-specific funds. The CWB's administrative operating costs, as well as interest, insurance, storage, and terminal elevator charges are deducted from the pooled receipts. If the money in a pool after the crop is sold exceeds the initial payment plus CWB costs, the surplus is returned to producers in a final payment according to the quantity of grain they delivered. If the pool money does not cover CWB costs and the initial payments, the government makes up the deficit. A deficit has seldom occurred, however.

Under the pooling system, producers collectively reduce risk and obtain increased price stability (within the crop year) at the expense of forgoing potential higher individual gains. But since the price that producers ultimately receive is an averaged price over several months, the price pooling system slows producer response to changing world market conditions.

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1. This section draws upon Alex F. McCalla and Andrew Schmitz, "Grain Marketing Systems: The Case of the United States versus Canada," American Journal of Agricultural Economics, vol. 61, no. 2 (1979), pp. 199-211.

The CWB imposes a quota on each producer's deliveries into the commercial marketing system. The purpose is to match producer deliveries to market requirements in order to assure an even flow of grain into the market system and to give all producers an equal opportunity to sell their grain. Thus the CWB controls the quantity of grain each producer can deliver at any particular time.

Although the CWB regulates producers' deliveries, producers decide what crops to grow. The quota for a producer is derived from his quota base calculated according to his share of the land that all producers have planted to crops. A producer may allocate any part of his quota base, or all of it, to the delivery of a particular kind of grain. The number of acres that a producer plants to each grain determines the quantities of that grain the producer will be able to deliver to an elevator under quotas authorized from time to time. Through the quota system, the CWB manages flows to the market and has at times forced producers to hold sizable inventories. Large inventories may cause producers to reduce acreage; thus, the quota system can serve as an indirect means of regulating national output.

The CWB does not actually handle grain. It owns no storage facilities; virtually all off-farm storage space is privately or cooperatively owned. Although grain-handling facilities are privately owned, maximum primary and transfer elevator tariffs are established with consultation annually by the Canadian Grain Commission. About 80 percent of the primary elevators are owned by cooperatives.

The Grain Transportation Authority controls grain transportation, but the CWB is responsible for the transportation of grains within regional shipping areas. Rail shipping rates for grain for export are fixed by statute. In Canada the primary and dominant mode of transportation is the two transcontinental railroad systems--one privately owned (the Canadian Pacific) and one publicly owned (the Canadian National). Freight rates for grain shipped on the Great Lakes are determined through negotiation by the CWB and private shippers.

THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

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The Potential Role of Insurance in U.S. Agricultural Policy

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THE CONFLUENCE OF SEVERAL political trends has significantly changed the focus and tenor of the 1985 agricultural policy debate. Widespread dissatisfaction with the current set of policies is evident, in part because these policies have not succeeded very well in dealing with such chronic agricultural problems as low incomes, highly variable incomes, and excess production. Furthermore, Fig. 1, p. 2, indicates that they have been ineffective despite large increases in government expenditures for agriculture during the 1980's.

In addition, the role which the federal government plays in the U.S. economy has undergone a major change during the past several years. Deregulation has already given the banking, airline, and trucking industries greater autonomy. The Reagan administration has claimed a mandate to carry the "Second American Revolution" to completion. This revolution promises that market forces will play a larger role in the U.S. economy. This paper will discuss several insurance or insurance-like agricultural program alternatives, some of which would enlarge the role of these market forces.

Of the three chronic agricultural problems mentioned previously, low incomes, highly variable incomes, and excess production, an insurance program would be most effective in dealing with income instability. Since premiums and coverage levels will be adversely affected by excess production, insurance could, over time, have an impact on this problem as well. However, a properly designed and administered insurance program would not address the problem of low farm incomes, because it would not transfer income to the agricultural sector.

The Rationale for an Insurance Based Agricultural Policy

Insurance has at least four properties that make it attractive to policymakers. First, insurance programs are designed to be countercyclical. Insurance is a net cash drain in good years and a source of capital in bad ones. A second feature of insurance that many find attractive is its potential to link the cost of protection to management decisions. The current set of farm programs (target prices, deficiency payments, land set-asides, marketing orders, farmer owned reserves, and so on) is frequently taken to task for intercepting signals of changing supply and demand conditions. If properly designed and run, an insurance program will transmit market signals yet mute some of their more devastating results.

The third characteristic that makes insurance appealing is its potential for actuarial soundness. The acturial potential of insurance contributes to the two characteristics discussed above and provides the political appeal of not being a "give-away" program. Finally, some of the programs to be discussed are, or could be, run by private insurance companies. This conforms to the aforementioned trend of government divestitures and may reduce federal government expenditures on behalf of agriculture (see Fig. 1).

Seven Insurance Based Program Alternatives

The seven alternatives to be examined in this paper represent a broad range of program designs. Four of the seven programs are currently being used in the U.S. or Canada. The four functioning programs are Canada's Western Grain Stabilization Program, the Federal Crop Insurance Corporation's (FCIC's) All-Risk Crop Insurance, Commodity Credit Corporation (CCC) nonrecourse loans, and agricultural options markets. The other three programs are price insurance, revenue insurance for a single crop, and whole farm revenue insurance. In the discussion to follow, each alternative will be described and its objectives discussed. The benefits and costs of each program will then be examined. Table 1, p. 3, summarizes some of the characteristics of the seven programs.

CCC Nonrecourse Loans

Since 1933 the CCC has made "nonrecourse" loans to farmers who grow certain crops.[1] The loans are called nonrecourse because the farmer can either repay the

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The views expressed in this paper are the author's and do not necessarily represent those of the USDA.

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loan (plus interest and storage charges) within nine to twelve months or sell the crop to the CCC for the amount owed. The size of the loan is determined by the loan rate (established by legislation), the program yield for the farm (an historically based value), and the number of acres enrolled in the program. The loan rate is set in dollars per unit of production (hundredweight, bushels, bales) and is frequently referred to as the support price, since it sets a floor below which national prices have difficulty in falling. Participation in the program guarantees a minimum price for the output produced. The costs of participation are in the form of acreage reductions (sometimes farmers are paid to reduce planted acres) and reporting requirements (farmers must complete various production activities by certain dates and report this to the Agricultural Stabilization and Conservation Service—ASCS—the agency which administers the program).

Target Prices and Deficiency Payments

In addition to the loan rate, some crops covered by CCC have a "target price" which reflects an average cost of production. If the national average price for a covered commodity is less than the target price, a participant in the CCC program receives a "deficiency payment." The deficiency payment is the difference between the target price and the average price or the loan rate (whichever is smaller), multiplied by the farm's program yield per acre, multiplied by the number of acres in production.

Farmer Owned Reserve

The final wrinkle in the CCC program is known as the Farmer Owned Reserve (FOR). The FOR is, in essence, a three year extension of the CCC loan. The FOR leaves grain produced under the CCC program in the farmer's hands for up to three years. The farmer receives a payment to offset storage costs. Stocks held in the FOR are eligible for sale when the market price for the commodity reaches a predetermined level known as the "release price" and must be sold if it reaches the "call price."

In summary, the CCC program establishes a floor

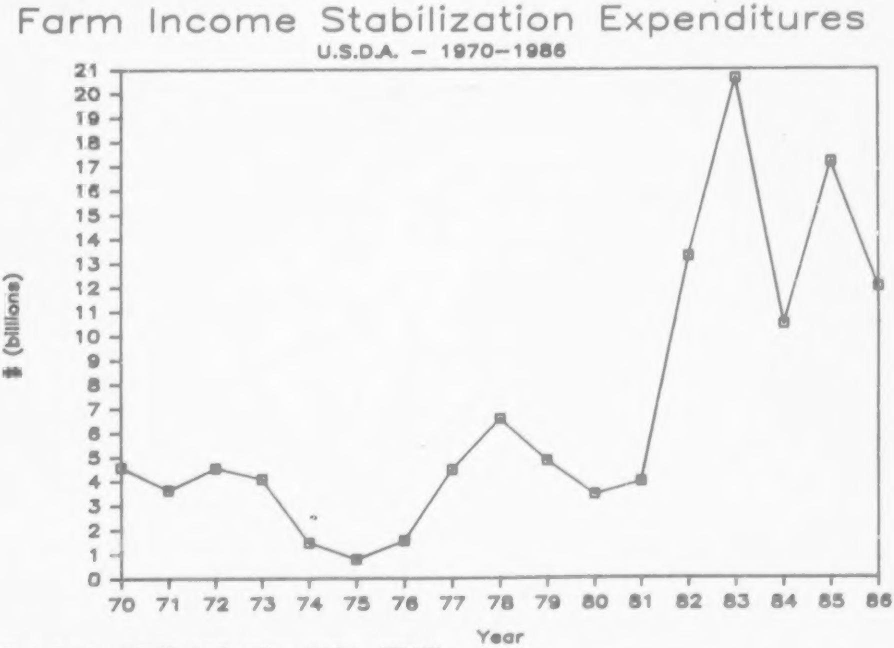

Fig. 1—Farm Income Stabilization Expenditures, U.S.D.A.—1970-1986.

SOURCE: *The United States Budget in Brief* (various years), Executive Office of the President, OMB, Washington, D.C.

a) Includes expenditures by the Commodity Credit Corporation, Federal Crop Insurance Corporation and Farmers Home Administration.

b) 1983 expenditures also include PIK payments.

c) 1985 and 1986 values are projections.

Table 1—Characteristics of Insurance Alternatives.

	Program Alternative						
Characteristic	*CCC Price Supports*	*Western Grain Stabilization*	*FCIC Crop Insurance*	*Options Contracts*	*Price Insurance*	*Crop Revenue Insurance*	*Farm Revenue Insurance*
Coverage on	Price	Aggregate Cash Receipts	Quantity	Price	Price	Crop Revenue	Farm Revenue
Coverage for	14 Crops	7 Crops	35 Crops	4 Crops 2 Livestock	Uncertain	Uncertain	Uncertain
Coverage Level Set by	Legislation	5-Year Average Cash Flow—Region	Established Yield or IYC	Purchaser and Market Expectation	Operator's Price Distribution	Crop's Distribution of Returns	Farm's Distribution of Returns
Benefit Trigger	National Average Price Less Than Target Price	Aggregate Cash Flow Less Than 5-Year Average Average	Actual Yield Less Than % of Established Yield	Futures Price Less Than Put Price	Sale Price Less Than Insured Price	Crop Revenue Less Than Insured Revenue	Farm Revenue Less Than Insured Revenue
Cost to Farmer	Reporting and Set-Aside	1.5% of Value Grain Marketed	Cash Insurance Premium	Options Premium	Cash Insurance Premium	Cash Insurance Premium	Cash Insurance Premium
Cost to Taxpayer	Program and Admin. Cost	3.5% of Value Grain Marketed	30% Premium Subsidy and Admin. Cost	Cost of Regulatory Agency	Any Premium or Admin. Cost Subsidy	Any Premium or Admin. Cost Subsidy	Any Premium or Admin. Cost Subsidy
Cost to Consumer	Higher Price If Set Above Equilibrium	No Obvious Cost	No Obvious Cost	More Volatile Prices	No Obvious Cost	No Obvious Cost	No Obvious Cost

price for covered commodities and a ceiling price as well. The cost of participation is not an out-of-pocket cash expense but may include a time cost (reporting requirements), an opportunity cost (acreage reductions), and a reduction in the maximum potential level of returns (the effect of the ceiling price).

Advantages of the CCC Program

Proponents argue that the CCC has helped stabilize prices and assure adequate supplies of commodities and has promoted orderly marketing of agricultural products. By stabilizing prices, the CCC has reduced farmers' price risks. This, it is argued, has improved the farmer's ability to plan investments, marketing strategy, and production decisions. Plentiful supplies and stable prices are also beneficial to consumers. The program has encouraged orderly marketing by reducing the need to sell at harvest.

Disadvantages of the CCC Program

The nonrecourse loan program has come under a good deal of criticism in recent years. During the past decade, floor and ceiling prices have been set at relatively high levels, resulting in large accumulations of stocks and high program costs. By setting the target price above market clearing levels, the program has deflected the signals the market sends to farmers. This, it is argued, has led to overinvestment in agriculture.

In addition to encouraging excessive investments in agriculture, CCC programs have been accused of adversely affecting agriculture's capital structure. Critics suggest that during the 1970's the benefits of CCC programs were, for the most part, capitalized into land values. They also argue that high support prices in the early 1980's have retarded needed economic adjustments.

The program has also been criticized on equity grounds. Since benefits are paid on a production basis, the greater the output, the larger the benefit received. Thus farms with over $200,000 in sales received an average of 21.9 percent of direct government payments to agriculture during the 1980's, yet made up only 4.5 percent of all farms.[3]

Finally, the institutional design of the CCC programs can be criticized on several grounds. First, the rate of compensation is set by legislation and may give only passing regard to market conditions. This susceptibility to political pressures often leads to high program costs. Second, the design does little to link management decisions to the cost of protection. For instance, the benefit trigger is based not on the outcome for an individual farmer, but on the average outcome for farmers across the country. Furthermore, the premium doesn't obligate the farmer to any out-of-pocket expenses and is the same (on a proportionate basis) for all producers of a given commodity. This design reduces data needs but also contributes to some of the negative performance aspects noted above. Third, coverage often has unintended spillover effects for both nonparticipant producers of a supported crop and for other producers. An example of the latter type of spillover might be the impact feed grain price supports have on livestock feedlots.

At the heart of these criticisms is the fact that the CCC is a program with multiple goals. It is difficult to say whether supply management, income support, or price stabilization is the primary objective of the CCC.

Because these goals are not always compatible, it is not surprising that the design of the program is more than a little idiosyncratic.

Canada's Western Grain Stabilization Program

Canada's Western Grain Stabilization Program (WGSP) differs from other programs to be discussed in one important respect, that of the insured unit. It is designed to protect Western Province farmers as a group from major downside deviations in aggregate cash flow. The institutional design implies a belief that, in general, producers in this region face very similar environmental and economic risks. If this is correct, individual experiences will closely match the aggregate experience. If it is not correct, farmer Jones can have a good (bad) year yet receive (not receive) a benefit from the WGSP.

Benefit Calculation and History

WGSP payments to a participating farmer are based on three factors: the individual's total contributions to the stabilization fund over the past three seasons (including the current one), contributions from all participants over the same period, and the total stabilization payment.[3] A farmer's benefit is determined by dividing his contributions by total contributions and multiplying the resulting fraction by the total stabilization payment. Currently coverage is limited to the first $60,000 in grain sales.

To determine if a stabilization payment will be made, net cash returns (the value of sales of the seven crops less cash production costs) in the current year are compared to average net cash receipts during the preceding five years. If current returns are less, the difference is multiplied by the participation ratio (defined as the percentage of eligible producers participating in the WGSP), and the product is the total stabilization payment. In 1984, a payout trigger based on a comparison of the current year's net cash receipts per ton and a five year average was added to the system. The second trigger is designed to increase the sensitivity of the program to price and cost variation during periods of increasing output volumes.

Over WGSP's period of operation, 1976 to 1983, participants have contributed roughly as much as they have received. Since the government contributes an amount even larger than the farmers, the fund currently shows a substantial surplus. Participation in the program was automatic at its inception, but producers could opt out of it at any time during the first three years. Similarly, new entrants are automatically enrolled but can withdraw during their first three years of farming. Participation in the program is high (75 percent of eligible producers with an even higher rate among new entrants).

The Role of the Canadian Wheat Board

The operation of the WGSP is heavily dependent upon the Canadian Wheat Board (CWB). In large part, the CWB eliminates price variability across farms in Western Canada. By implication, farmers in Western Canada compete against one another in terms of yields and cost control but have a "level playing field" in the marketing domain. The CWB establishes a floor price prior to the cropping season. Participating farmers receive the floor price when they deliver their grain to CWB. In addition, after the six grains covered by CWB are sold (which can be a year or more after the farmer has delivered the commodity), total receipts are placed into a pool. If the pool is greater than the amount farmers received as an initial payment plus CWB's cost of operation, a second payment is received, prorated on the basis of sales to CWB.

The CWB is the only licensed agent for export sales of the covered crops as well as for nonfeed, domestic uses, so farmers have few alternatives except to sell to the CWB. Nonparticipation means producers have to compete for the relatively limited domestic feed market. Since the CWB reduces price risk, the WGSP can concentrate on risks associated with yields and rising input prices. The WGSP also relies upon the CWB to identify eligible participants, collect levies from participating farmers, and disburse benefits.

Advantages of the WGSP

WGSP's positive characteristics include an uncomplicated administrative structure, relatively modest data needs, and the fact that the program has been operating in Canada for several years. Because it has been functioning in Canada, in-depth studies of its successes and failures could be done prior to implementing such a program in the United States. Another positive factor is that insuring the seven crops as a group reduces the likelihood that farmers will make their production decisions on the basis of expected benefits from the stabilization program rather than on expected market conditions. Finally, because fixed costs are not included when calculating benefits and previous market outcomes help determine the insured level, the benefits of more stable returns are less likely to be capitalized into the value of fixed factors of production (such as land).

Production of these major feed and food grains is heavily concentrated in Canada's prairie provinces. This facilitates the pooling efforts of both the CWB and the WGSP, since these products have similar production costs and are close substitutes from the producers' point of view. Insuring them as a group makes sense. It is also probable that without the CWB, the WGSP would have been less successful. Because the CWB price is generally set by conditions in the world market, there are no obvious costs to the consumer. It is probable that by reducing the risks faced by Canadian farmers, the WGSP and the CWB have helped to increase supplies and thereby reduced, to some extent, the prices paid by Canadian consumers. Stable agricultural returns benefit nonfarm groups such as businesses in small communities, input suppliers, and local schools.

Disadvantages of the WGSP

As a general principle, insurance programs which base their coverage on averages over the entire insurance pool discriminate against those who are above average. The design used in the WGSP is much less attractive if an insurance pool faces nonhomogeneous hazards. Differences in market organization and other factors are likely to be powerful barriers to successfully transplanting this institution to the U.S. Furthermore, the program does not resolve the familiar dilemma between the desire to include a large proportion of total production in the program and considerations of equity, since benefits are received in proportion to output. As was the case with the CCC program, the WGSP does not establish a close link between the cost of protection and management decisions. The levy for participation is the same proportion for all producers, regardless of the extent to which they contribute to variability in the pool.

The Potential for a U.S. Program

The ultimate usefulness of a WGSP type of program in the U.S. will be determined by two factors. The first is the extent to which production in the U.S. is positively correlated across farms. If there is relatively little correlation, the protection a program such as WGSP offers individual producers will be reduced. The second factor is the institutional arrangements under which the program will operate. Important institutional factors include: the cost of the program for farmers and taxpayers, the coverage schedule, maximum benefit levels, the mix of crops covered, timing of benefits, trigger mechanisms used, and the relationship between this program and existing institutions such as the commodity programs. The institutional design would be important in determining the number of farmers who are attracted to the program and hence, the program's ability to pool the risks faced by participants.

Federal All-Risk Crop Insurance

Federal crop insurance was begun during the New Deal era and, except for a few interruptions, it has been available to U.S. farmers since that time. Crop insurance is now available in most counties in which a significant amount of agricultural production takes place. Coverage is available for thirty-five crops and has paid benefits on losses resulting from 119 different causes, with drought (41.5 percent), excess moisture (15.9 percent), frost (13.9 percent), and hail (10.9 percent) being the most commonly cited reasons for losses.[4]

Farmers wishing to purchase All-Risk Crop Insurance must sign up for the program early in the annual cropping cycle, usually between the first of the year and the end of April. The contract specifies dates by which the farmer must complete various cultural practices in order for the policy to remain in effect.

A contract offers a farmer three price and three yield elections from which to choose. The yield choices are based upon the established yield for the class of land worked by the farmer. A farmer can choose to insure at 50 percent, 60 percent, or 75 percent of this established yield. Price elections based on expected market conditions determine the rate at which a farmer will be compensated if he suffers an indemnifiable loss.

For example, suppose a farmer's established yield is 100 bushels per acre, 100 acres of production are insured at the 75 percent level with a $2.75 price election, and the actual yield turns out to be 70 bushels per acre. The farmer will receive $1,375.00 in compensation from FCIC [(75 − 70) × $2.75 × 100 acres]. It is important to note that the relevant trigger is the whole-farm average yield. Thus if a farmer has two fields, and the yield on one is below the indemnifiable level, but that on the other exceeds it by an amount large enough to bring the average yield for the two above the insured yield, no indemnity will be received.

In return for this coverage, a farmer pays a cash premium. Generally, the premium is based on the expected indemnity for the class of land worked by the farmer. The cost of the premium is subsidized by the government, which pays all the administrative and operating costs of the program.

Individual Yield Coverage

The FCIC has recently developed the Individual Yield Coverage (IYC) Plan. With the IYC, the insured yield is based on a farmer's actual production history. To determine the insurable yield, the IYC averages three years of verifiable yield data from the farm with seven years of county data from the ASCS. In each of the next seven years in which the farmer participates in the program, a year of farm data is added to the formula and a year of county data removed. Organizers hoped that the IYC plan would attract "better" farmers to the crop insurance program. Without the IYC, a farmer who has an average yield greater than the ASCS established yield would have to suffer a greater proportionate fall in production in order to qualify for an indemnity than one whose yield is less than, or equal to, the established yield.

In 1980 All-Risk Crop Insurance was designated to replace disaster payments as the main form of disaster relief in U.S. agriculture. The goal of the FCIC was to insure 60 percent of eligible acreage by 1984.[5] The administration's 1985 Farm Bill would reinforce this role by limiting Emergency Disaster (ED) lending by the Farmer's Home Administration to cases where FCIC coverage is not available.

Advantages of the FCIC

Proponents argue that by helping to insure a minimum level of output, crop insurance facilitates forward contracting, access to credit, capital formation, and investment decisions. To the extent that these benefits are realized, both farmers and other rural residents will benefit from the program. FCIC premiums do adjust to indemnities paid out, so the program does link coverage costs and management decisions, though the adjustment

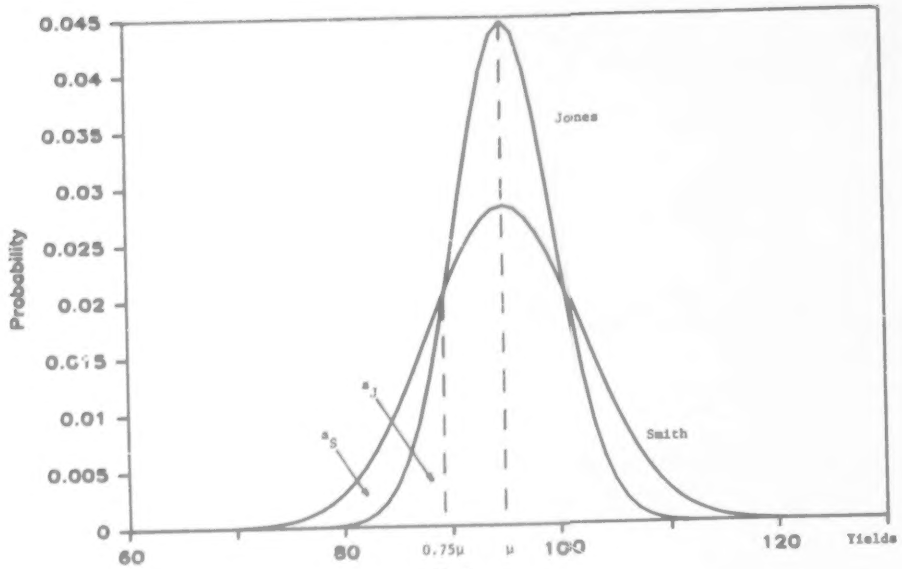

Fig. 2

process has been faulted for being sluggish. Finally, yield data with which to develop actuarial tables is relatively abundant.

Disadvantages of FCIC

FCIC crop insurance has two major problems. The first is the institutional setting in which it has operated. Insurance is an "ex ante" form of risk management, meaning protection is sought before exposure to the hazard. Premiums for crop insurance are paid before the farmer knows whether or not he will collect an indemnity. Since 1949, the FmHA's ED program has operated as an "ex post" risk management program. By allowing farmers to seek relief from an adverse outcome only after its occurrence, the ED program competes directly with crop insurance. Since farmers could forego the out-of-pocket expense of an insurance premium, yet be assured of a capital source in the advent of natural disaster, it is very likely that demand for crop insurance has suffered.

The second major stumbling block is the design of the crop insurance program itself. Crop insurance is based principally on average outcomes. Adverse selection, an insurance term describing a situation in which people who are likely to collect an indemnity in the coming period purchase insurance in numbers greater than their proportion to the general population, is more probable when such an approach is used. The two distributions in Fig. 2 represent the range of outcomes that farmers Smith and Jones have experienced over a given historical time period and the relative frequency with which those outcomes have occurred. Both farmers have the same average outcome over this period, but the variability of Smith's outcomes is much greater. A policy covering 75 percent of average yields offers Smith a much greater degree of protection ($a_s > a_j$). If Smith and Jones are signing up for insurance for the first time and have land of similar quality, they will pay similar premiums.

FCIC premiums will adjust to reflect the greater variability of Smith's experiences, but will do so slowly. The premium calculation doesn't seem to include explicit consideration of the proportion of the distribution covered by the policy. As a result, loss ratios (indemnities/premiums) for some crops (cotton) have been significantly and consistently greater than one, and participation rates in some of the country's more important agricultural regions (the Corn Belt) have been poor. Furthermore, a relatively slow response by the premium to changes in output experiences could be expected to engender problems with "moral hazard," an insurance industry term describing a situation in which the purchaser of insurance has an incentive to seek an unfavorable outcome.

Recent Events in FCIC

The IYC program, designed to address some of these shortcomings, has not been a rousing success. Preliminary figures from FCIC indicate only .234 percent of those who were eligible for crop insurance enrolled in the IYC program in 1984.[4] Several hypotheses for the low participation rate are possible. First, for those with on-farm storage facilities, verifiable yield data is difficult to obtain. Second, farmers following a rotation in which the crop to be insured is not grown every year will require considerably more than seven years to establish coverage based on their own yields. Finally, even if IYC is established in the minimum time, a ten year moving average results in rather sluggish adjustments to yield trends.

The Reagan administration's Farm Bill would eliminate the subsidy on FCIC premiums. Economic logic suggests that increasing the cost of insurance will reduce its consumption. To the extent that crop insurance has reduced the cost of risk taking (as indicated by areas or crops with loss ratios consistently in excess of 1), eliminating the subsidy would be expected to reduce production. Depending upon the distribution of these reductions in output, they could be a beneficial outcome of eliminating the subsidy (e.g., if fragile lands are removed from production, or if types of output of which we have excess supplies are disproportionately affected by the move). Since more of the cost of risk bearing would be shifted from taxpayers to purchasers of crop insurance, equity impacts could be associated with the change. The equity issue will be of concern if program participants are mainly smaller, lower income farms.

Agricultural Options Markets

In the fall of 1984, after an absence of nearly fifty years, agricultural options began trading on the major commodity exchanges in the U.S. The current options markets differ significantly from earlier ones because the options are written for longer periods and are written on futures contracts rather than on the physical products. In contrast to a futures contract, options allow the purchaser to take advantage of beneficial price movements while sheltering him from adverse ones. Because it offers greater protection, an option is more expensive than a futures contract.

Options markets function as follows. A seller (buyer) of a commodity purchases a put (call) option conveying the right, but not the obligation, to sell (buy) a futures contract at a given value, termed the strike price, on a specified date. In return for this right, a premium is paid to the party writing the contract. The size of the premium depends upon the length of time over which the protection is offered, the past volatility of the market, the level of protection sought, and expectations about future price movements. The longer the period covered, the more variable the market has been or is expected to be, or the higher the level of protection, the greater the premium demanded.

Options Compared to Price Supports and Futures Markets

Extensive interrelationships exist among governmental commodity programs, futures markets, and options markets. Since options contracts are written on futures contracts, they depend upon a properly functioning futures market. If increased use of options comes at the expense of the futures markets, futures markets could become thin and the entire structure unstable. The extent to which futures markets depend upon commodity programs is less direct but possibly no less important. Eliminating commodity programs would certainly increase the volatility of agricultural markets and hence, the cost of participation in futures or options markets. The other side of this coin is that a commodity market (either in futures or options) thrives on volatility. If a government program is too effective in controlling price volatility, trading on commodity markets is reduced. There is an interesting trade-off between the volume of trading on a market (which influences the efficiency of the commodity market) and the cost of participating in the market (and hence the value of the protection offered).

Both options markets and governmental commodity programs offer protection from adverse price movements. A significant difference between the two is that the premium paid for a commodity option is a cash expense for the farmer. Another difference is that nonrecourse loans are written on the physical commodity rather than on a futures contract. Commodity options are written for the periods covered by futures markets and hence, may cover more than one cropping cycle. In contrast, a commodity program functions for a single season. In addition, commodity programs offer a single level of price protection while an options market allows a participant to select the level of protection desired.[5]

Advantages of Options Markets

As a policy alternative, options have several attractive characteristics. First, because they are expected to reduce both the average and the variability of a participant's revenue, they should have a more neutral effect on output and on capital flows between sectors than commodity programs (which are designed to decrease variability yet increase the average outcome). Second, because they don't increase expected returns, options shouldn't suffer from the other major problem associated with current commodity programs: capitalization of the benefits into the value of fixed factors of production. Third, moral hazard is unlikely to afflict an options market, since an unfavorable outcome experienced by an individual would not, in general, increase the value of his option. Fourth, adverse selection is unlikely in an options market, because higher risk farmers would not benefit disproportionately from the option. Fifth, data problems would not disrupt options.

A lack of data would simply increase the riskiness of a given market and cause the premium demanded for an option to increase. Finally, greater use of options in agricultural policy could benefit taxpayers by reducing governmental expenditures on behalf of agriculture.

Disadvantages of Options Markets

One drawback of using options or futures markets as a substitute for commodity programs is that to date, few farmers have availed themselves of the price protection offered by these markets.[4] This lack of participation is said to be caused by a number of factors: contracts written in denominations that put them beyond the reach of many farmers, lack of an understanding of how these contracts operate, suspicion, lack of options or futures markets for many types of production, and alternative risk management mechanisms such as the commodity programs. As noted, an options contract will represent a larger cash expense for the farmer than a futures contract (and an infinitely larger one than current commodity programs). This could also reduce utilization.

A second issue is that options and futures contracts offer very limited interannual protection. They are designed, in the main, to protect against within year price movements and to offer limited protection for periods of up to eighteen months. In other words, they can ensure that a price that is low relative to recent historical standards can be locked in as a price floor, but they can't provide relief from the low price itself. Though between year price protection is not the intent of these institutions, this has been an historical concern of agricultural policy. Because between year price variability affects the cash flow of the agricultural sector, nonfarm rural residents and other groups associated with agriculture are also concerned with this problem.

A third concern is the weak link between the cost of an options contract and management decisions. The cost of an option depends upon the performance of the futures market. Futures markets will be unaffected by an individual farmer's production or marketing decisions. Therefore, from a societal point of view, dependence upon options markets may, in the short term, lead to an underinvestment in means of reducing risk.

Price Insurance

Few detailed price insurance proposals have been put forward so the description to follow is, of necessity, tentative. Coverage would guarantee the farmer a minimum price for his commodity based on prices received during an historical period. This minimum price could be based on an average market price for a given commodity in a particular market (in which case heated arguments would no doubt develop over the definitions of these factors) or upon the price obtained by the individual farmer. The insurance premium would be a function of the insured level, past price variability, the probability of experiencing an indemnifiable event, and expectations for the coming period.

Advantages of Price Insurance

Price insurance has a number of attractive features. Because the premium would be based, in part, on the insuree's past actions, price insurance could link the cost of coverage to management decisions. This link could be expected to increase returns to risk reducing marketing strategies. Price insurance also offers farmers protection for a variable over which they have very little control (assuming the farmer has more potential to control output). The cost of the program for taxpayers would depend on the subsidy (if any) the government might offer on premiums. To the extent that price insurance reduced risk, consumers would benefit from the expected short-term increase in production.

Disadvantages of Price Insurance

Basing coverage on the price obtained by the individual farmer could result in problems with moral hazard if benefits were too generous or the premium were too slow to adjust to changing risk situations. Adverse selection could also hamper a price insurance program of this type. In addition, price insurance would have limited ability to stabilize farm income.

Insurance is most successful when the properties of the distribution of the outcomes being insured are known to the party offering the insurance. The stability of the relationships which produce the distributon is also an important factor. If these conditions are met, and if actions taken by the insured parties do not significantly alter this environment, the hazards facing a group of people can be pooled.

Agricultural price distributions are unlikely to meet these prerequisites. In addition to the vagaries of weather, institutions within and across countries profoundly affect agricultural commodity prices. These institutional factors include government price policies, agricultural research and development programs, trade policies, transportation and communication systems, and myriad other factors. Furthermore, the precise effect which an institution has on a price distribution is difficult to determine. Finally, the composition of institutions can change abruptly and extensively, adding yet another dimension of uncertainty to the situation. In short, it is difficult to argue that the properties of price distributions are known and evolutionary over time or space. This makes developing an actuarially sound price insurance program much more difficult.

If coverage were based on an average price in a given market, outcomes would be highly correlated across individuals. This means that when payouts occur, they would occur for everyone in the defined market. In such a case, price risks faced by farmers could only be pooled intertemporally. Price insurance in this form would be very similar to Canada's WGSP. As with WGSP, the success of intertemporal pooling is likely to depend upon the institutional structure within which a price insurance program functions and upon how that structure changes over time.

Price Insurance Compared to Price Supports and Options

The importance of the institutional structure can be appreciated by considering the impact which options and government commodity programs would be expected to have on a price insurance program. Commodity programs offer protection similar to, and in some senses better than, price insurance, since they involve no cash expenses. Therefore price insurance will probably be less successful if it has to compete against commodity programs. On the other hand, options markets would probably enhance the likelihood of a successful price insurance program, because the insurer could use them to obtain some protection from unexpected price fluctuations.

Some might feel that price insurance is so similar to agricultural options that having both institutions would be redundant. Both would protect the purchaser from adverse price movements but would not preclude him from profiting from beneficial ones. Both also result in an additional cash expense for the farmer.

However, price insurance differs from options in other important ways. Insurance puts greater emphasis on past outcomes than do options markets. The actuarial tables used in insurance are generated from probability relationships that have evolved over time. Past experiences are important in options markets also, because they provide a frame of reference upon which to build expectations of the future. However, options markets are, generally speaking, a much more forward-looking institution. The most important difference between options and price insurance is that insurance offers more protection from between year price movements. Insurance of this type is designed to deal with deviations from a long-run average. Options, on the other hand, essentially take the price level indicated by the futures market price as given and protect against deviations from that level.

Revenue Insurance by Crop

In the 1981 Farm Bill, Congress requested a study of the feasibility of replacing current farm income support programs such as CCC nonrecourse loans and the FOR with a revenue insurance program. In response, two analyses of the farm revenue insurance proposal were published in the summer of 1983.[9] In both works, the proposed revenue insurance program would protect the producer from significant downside variation in the gross revenue from a given crop.

The level at which a farmer could insure would be based upon his recent production experiences. Revenue insurance might function like crop insurance and offer coverage at 50, 60, and 75 percent of the ten year average of gross receipts from the crop. Note that gross receipts rather than net income would be insured by this program. Revenue insurance would stabilize the number of dollars created by the crop but would do nothing to stabilize the cost of producing it. As a result, success in farming would not be guaranteed by such a program.

The best way to calculate the annual gross receipts earned by a farm for a given crop is, in itself, an unsettled issue. It is generally agreed that, if possible, an individual farm's output should be used in the calculation, but there is less agreement with respect to the appropriate price to use. Some of the alternatives considered are the actual prices received by a farmer, the average market price for the commodity during some marketing period, and an average state or local price. The most appropriate choice depends upon a number of factors: the speed with which the insurance premium adjusts to changing economic conditions, the verifiability of data, the degree to which distinct market areas can be defined, and the degree to which prices received by farmers differ. In any case, farmers would pay a cash premium for the protection offered.

Advantages of Single Crop Revenue Insurance

Proponents argue that an actuarially sound revenue insurance program will improve resource allocation between agriculture and the rest of the economy and within agriculture (because farmers' planning capacity will improve and investments in risk-reducing inputs or organizational strategies will not be undervalued). Many also believe that revenue insurance would improve the economic health of farmers and rural communities by reducing the volatility of farmers' earnings (thereby reducing cash flow difficulties). Furthermore, revenue insurance seeks to stabilize a variable (revenue) more closely related to one in which farmers have a primary interest (income) than do the other programs discussed. Finally, stabilizing revenue enables the program to take advantage of the expected negative correlation between prices and quantities, thereby reducing the cost of providing comprehensive coverage relative to separate programs for prices and yields.

Disadvantages of Single Crop Revenue Insurance

A single crop revenue insurance program also has a number of drawbacks. First, single crop coverage may encourage moral hazard. For example, a farmer growing corn and soybeans might purchase a revenue insurance policy for his soybeans but not for his corn. Suppose both crops require his immediate attention at a critical point in the growing cycle because of an infestation of pests or some other problem. It is highly probable that the farmer will tend to his corn crop first, since losses on his soybean crop will be limited to the amount of his deductible, but all corn crop losses will be borne by him.

Single crop revenue insurance might also engender adverse selection problems. If the above mentioned corn and soybean farmer knows his soybean crop is more likely to fail than his corn crop, he may be more interested in acquiring protection for his soybeans. Coverage for higher risk crops should be more expensive, but if data needed to develop actuarial tables do not exist, as is likely for revenue insurance, this may not be the case.

Both adverse selection and moral hazard are symptoms of a larger problem facing a revenue insurance program, that of how to obtain data of sufficient quantity and quality to develop actuarial tables.

The appeal of single crop revenue insurance would obviously be limited to farmers growing crops which are covered by the program. The smaller the pool of potential clients for a revenue insurance program, the lower the likelihood of success. With more farmers from more regions of the country and with more crop types covered, the seller's ability to pool risks successfully should increase. In addition to reducing pooling capacity, selective coverage of crop types could disrupt resource flows within agriculture.

Finally, revenue insurance on a crop by crop basis increases the transactions costs associated with achieving comprehensive protection for farms producing more than one type of output. Purchasing revenue insurance on a single crop basis would be analogous to purchasing different automobile policies to protect the left and right sides of your car or separate health insurance policies for heart problems, maternity coverage, and liver diseases. The total cost of individual policies to buyers and sellers would be substantially greater than more comprehensive approaches. Higher premiums will discourage participation, and lower participation will reduce the effectiveness of the program.

Whole-Farm Revenue Insurance

The only substantive difference between this revenue insurance proposal and the one just discussed is that whole-farm revenue insurance would guarantee a minimum level of total gross farm receipts rather than receipts from a single crop. Again, defining total gross receipts can create difficulties. Here it is assumed that gross receipts consist of the farmer's annual imputed returns (accounting for changes in the value of inventories) over a base period with adjustments for inflation and changes in farm size. Net farm income would not be insured by this program. Furthermore, nonfarm earnings would not be considered insurable revenue.

The premium charged for coverage would be calculated using what is termed the "loading factor." The loading factor calculates the premium as a percentage of expected indemnities. In other words, if $1,000 worth of indemnities are expected to be paid out and $1,100 in premiums are collected, the loading factor is 1.1 (= 1100/1000). The loading factor for a revenue insurance program should exceed one, since this means all indemnity costs and at least a portion of the insurer's administrative costs are, on average, being offset by premium collections.

Government Involvement in Whole-Farm Revenue Insurance

The absence of revenue insurance from the constellation of policies offered by private insurers is convincing evidence that it is unlikely to appear spontaneously. Administration of the whole-farm revenue insurance program could follow the FCIC example, where policies are sold (and in some cases serviced) by private insurers with reinsurance offered by the federal government. The government may also have to subsidize the cost of collecting data.

The degree to which the federal government participates in or underwrites a whole-farm revenue insurance program poses some interesting dilemmas. One of the major stumbling blocks to implementing a revenue insurance program is the lack of data on farm revenue. For several types of insurance (including FCIC All-Risk Crop Insurance and Crop Hail Insurance), the government is the major source of data used to develop actuarial tables. The data required for revenue insurance are expensive to gather and, as a result, are unlikely to be collected by the private sector when the market for revenue insurance is relatively small. These data are also of a highly sensitive nature, and many farmers will be suspicious if the government is actively involved in collecting them. In short, government involvement in a revenue insurance program could be a positive or a negative factor.

Advantages of Whole-Farm Revenue Insurance

The major advantage of whole-farm revenue insurance over single crop coverage is that it reduces the potential for moral hazard. A farmer with whole farm revenue insurance who must choose which of several crops will receive his attention will not base this choice on the fact that he can share losses on some crops with the insurance company. This form of insurance would also reduce costs for farmers who grow several types of products and want comprehensive revenue protection. Whole-farm revenue insurance should facilitate access to short-term credit since a farmer can assure creditors that in a worst case scenario, the farm will generate the insured level of gross receipts.

Disadvantages of Whole-Farm Revenue Insurance

Whole-farm revenue insurance faces a number of obstacles to implementation. First, there is a great deal of uncertainty about the ramifications of such a major policy change. Because the impacts are uncertain, policymakers may hesitate to rely upon revenue insurance as a major component of agricultural policy. Observers have argued that agricultural prices have been heavily influenced by many institutions. If revenue insurance substantially changes this institutional setting, the range of revenue outcomes facing farmers, and hence the cost of revenue insurance protection, will probably increase. The resulting short-term economic dislocations could be very large.

A second obstacle facing whole-farm revenue insurance is farmer acceptance. In limited field work done by the author, farmers expressed very little interest in revenue insurance. Two-thirds of the farmers contacted refused to participate in a project examining the potential applications of whole-farm revenue insurance. Of those who did participate in the study, many were unconvinced that revenue insurance could be affordable, fairly priced, or effective in reducing the variability of their revenue streams. It might be difficult, therefore, for revenue insurance to gain widespread acceptance among farmers. Furthermore, since revenue insurance would be an additional cash expense, it might be compared unfavorably to current commodity programs, which offer less comprehensive coverage but have no out-of-pocket costs.

Summary

Clearly one of the performance criteria for these insurance oriented options is their ability to improve efficient farmers' potential for economic survival. The main contribution toward improved economic survival offered by most of the programs discussed in this paper is stabilized returns in farming. An additional consideration is the cost farmers, consumers, and taxpayers would pay for the different types of protection. Consideration should also be given to the impact these alternatives have on groups with close ties to farmers: input supply industries, agricultural banks, and rural communities. Other performance criteria include: the strength of the link these options establish between management decisions and the cost of protection from risky outcomes, the impact they have on resource flows and agricultural production, and whether or not they are likely to suffer from moral hazard or adverse selection. Table 2 summarizes the conclusions reached regarding the ability of these seven alternatives to satisfy these criteria. Further empirical work will be required before more detailed estimates of the costs and benefits of the various programs discussed in this paper can be evaluated.

Table 2 indicates that none of the alternatives is superior in every performance criteria. By implication, therefore, serious consideration of these alternatives for a place in the nation's agricultural policy should start with a recognition of the trade-offs involved. Thus if an insurance based program is to be used in a policy context, the nature of the protection desired must be defined. Are we concerned about variations within the year or variations between years? Are we interested in providing comprehensive or partial protection? Should we provide protection for the individual or the group? The answers to these questions will be important in determining the appropriate policy option to pursue.

To the extent that unstable revenue emanates from factors beyond farmers' control, the link between management decisions and the cost of protection becomes more tenuous. For example, if the principal source of instability facing a farmer is caused by the trade policies of the Soviet Union, there may be fewer

Table 2—Expected Performance Rankings of Insurance Alternatives(a).

	Program Alternative						
Characteristic	*CCC Price Supports*	*Western Grain Stabilization*	*FCIC Crop Insurance*	*Options Contracts*	*Price Insurance*	*Crop Revenue Insurance*	*Farm Revenue Insurance*
Link Cost of Protection and Management Decisions	7	6	4	5	3	2	1
Stabilize Farm Income	4	3	6	7	5	2	1
Cost to Farmer	7	6	5	4	3	2	1
Cost to Taxpayer	3	5	6	7	4	2	1
Cost to Consumer	1	—	2	—	—	—	—
Expand Production	1	2	3	7	6	5	4
Adverse Selection	2	6	1	7	4	3	5
Moral Hazard	—	—	3	—	4	1	2
Beneficial Impact on Rural Groups	5	3	6	7	4	2	1
Improve Resource Allocation	7	6	5	3	4	2	1
Data Availability	4	3	2	1	5	6	7

(a) The smaller the number the greater the assumed impact. For instance, we expect Whole Farm Revenue Insurance to have the greatest ability to stabilize farm incomes.

Likewise, we expect Whole Farm Revenue Insurance to be the most costly for farmers and taxpayers.

A dash (—) in a cell means that no impact is hypothesized for that alternative and criteria. The numbers indicate expected rankings, not relative magnitudes.

management decisions that farmer can take to reduce the cost of insurance coverage than if environmental factors are the main source of instability.

In summary, insurance based policies are promising alternatives to some current agricultural programs, but their limitations must also be understood. Insurance programs may be able to deal effectively with a subset of the problems facing agriculture but they won't solve all of these problems. Limited data and institutional constraints present formidable barriers to successful implementation of some of the more ambitious programs. However, in view of the serious problems facing the food system and the general level of dissatisfaction that seems to exist regarding current farm policy, insurance based programs deserve greater consideration by policy analysts.

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Footnotes

[1] Crops currently covered by CCC programs include: corn, wheat, feedgrains, rice, tobacco, cotton, soybeans, dairy products, peanuts, sugar, honey, wool, and mohair.

[2] "Economic Indicators of the Farm Sector," ECIFS 3-3. Washington, DC: USDA, Sept. 1984, pp. 94 and 80.

[3] Producers in the Canadian prairie provinces who grow wheat, rye, oats, barley, flax, rapeseed, and mustardseed are eligible for the program. A Congressional Budget Office publication entitled *Canada's Western Grain Stabilization Program: An Option for U.S. Farm Policy?* (Nov. 1984) provides a good description of this program.

[4] *An Inside Look at Crop Insurance,* Washington, DC: USDA, March 1980.

[5] Vernon L. Sorenson, *The Federal Crop Insurance Program,* Michigan State Univ. Agr. Econ. Staff Paper 82-38, East Lansing, MI, 1982, p. 1. It should be noted that accomplishments fell far short of ambition, as the FCIC covered approximately 13.6 percent of eligible acres in 1984.

[6] Personal communication from FCIC officials.

[7] For example, on Apr. 2, 1985, the *Wall Street Journal* listed strike prices for soybeans of 550, 575, 600, 625, 650, and 675 cents per bushel on contracts written for May, July, and Nov. of 1985. In contrast, current legislation would set the loan rate for soybeans at 502 cents per bushel for 1985.

[8] Officials at the Federal Commodity Trading Commission have informed the author that most of the trading has involved "non-commercial" traders, that is speculators. In any case, the volume of trading in most agricultural options has been light. The *Wall Street Journal* of Apr. 2, 1985, for example, reported a volume of 252 calls and 335 puts for the live cattle option offered by the Chicago Mercantile Exchange. Soybean options on the Chicago Board of Trade have generated the greatest amount of interest, with a volume of 925 calls and 490 puts on Apr. 2, 1985.

[9] A Federal Task Force commissioned by Congress issued a report entitled *Farm Income Protection Insurance: A Report to the United States Congress.* (Washington, DC: USDA Farm Income Protection Insurance Task Force, June 1983). The thirteen member task force reached no consensus on the potential value of revenue insurance (six of the thirteen members issued a dissenting opinion to the report). The second analysis of revenue insurance, entitled *Farm Revenue Insurance: An Alternative Risk-Management Option for Crop Farmers* (Aug. 1983), was prepared by the Congressional Budget Office.

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IV. RESOLVED: THAT THE FEDERAL GOVERNMENT SHOULD IMPLEMENT A COMPREHENSIVE LONG-TERM AGRICULTURAL POLICY IN THE UNITED STATES.

THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

26

The Changing Politics of the Farm and Food System

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TWO CENTURIES AGO the federal government owned almost all of the vast land area that now provides the nation's food supply. Through the Homestead Act of 1862, the government distributed property rights to much of that land in small parcels. Thus family farm agriculture was established through public policy designed to place the land in the hands of those who tilled the soil.

At approximately the same time, the United States Department of Agriculture was established, primarily to provide technical assistance to farmers to enable them to improve the quality and increase the quantity of the food they produced. Agricultural colleges provided Experiment Stations and Extension Services to conduct research and disseminate information to the people.

Prior to the Great Depression, government involvement in the farm and food system focused on scientific input and on protecting and marketing our food supply. Depression hit the farm economy in the '20's, before it affected the rest of the economy. Collapse of farm prices, bankruptcies, and land foreclosures resulted in a distinct change in government involvement.

Government intervened on behalf of farmers in the marketplace, supporting prices at a parity level. Parity was defined as the relationship between prices received by farmers for products such as grain and livestock and the prices paid by farmers for fertilizer, fuel, etc. The goal was to establish the same relationship as that which had existed in the prosperous years of 1910-14. Since the Agricultural Adjustment Act of 1933, the U.S. government has been directly involved in supporting farm prices and attempting to control the amount of agricultural production.

In the '20's and early '30's surplus production caused low farm prices. The answer to this problem was to have the government support prices, which merely provided farmers with an incentive to increase production. Thus government required farmers to leave some land idle in order to receive price supports. Over the years, changes in farm programs have occurred, but the original basic tenets remain in effect. In addition to supporting prices, the government has assisted farmers in forming cooperatives to market their products, purchase supplies, and to secure credit in the commercial world as groups rather than as individuals.

A new dimension was added to farm and food policy in the '60's, and this dimension became a vital part of the system in the '70's. We began to export more and more food products overseas. U.S. agriculture has more than enough capacity to provide all the people in the U.S. with adequate diets. Roughly, one out of every three kernels of grain produced in the U.S. is exported. We export foodstuffs to Europe and Japan, and we distribute food to the needy in the food deficient developing nations. In the '70's, we began to trade vigorously with communist countries like Russia and China. Farm and food policy is now a part of foreign policy and of our relations with friends and foes overseas.

From Farm Policy to Food Policy

Farmers once formed a majority of the population. But their numbers declined because as modern technology and farming methods became available, one farmer could produce food for more and more people. With the declining numbers of farmers it could be expected that they would lose political power and receive unfavorable treatment from government. Not necessarily so.

When the basic farm programs were established, the Farm Bloc in Congress was made up primarily of Southern Democrats and Midwestern Republicans. This group was well organized and its members put farm interests before partisan politics. They practiced majority politics and controlled farm policy. Joining the Farm Bloc in the agricultural establishment were the USDA and the agricultural colleges, and behind them were the old-line farm organizations like the Grange, the Farm Bureau, and the Farmer's Union. The South was interested in peanuts, rice, sugar, cotton, and tobacco. The Midwest was interested in wheat, corn, and other

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Jerry R. Skees, University of Kentucky, Robert Spitze, University of Illinois at Urbana-Champaign, and Dale L. Stansbury, National Association of State Universities and Land-Grant Colleges, contributed reviews of the paper. This is one of a larger set of resource papers sponsored by the Extension Committee on Policy (ECOP), USDA-Extension, Michigan State University Cooperative Extension Service, and the various universities and organizations that supported those who have contributed papers and reviews.

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feed grains. Each region agreed to support the other's programs. It worked. It was a successful political coalition.

The coalition dealt with farm prices, farm income, and support for the family farm. Issues concerning food quality also surfaced. Inspection services were developed as a result of consumer protests, and with the support of the Farm Bloc, grades and standards were finally developed.

Traditionally, farmers had more political influence than their numbers indicated because state legislatures and the U.S. House of Representatives were not apportioned according to one person, one vote. A U.S. Supreme Court ruling in the '50's changed that. But other changes were in the air, and as fewer farmers were needed, migration to the city occurred. The Farm Bloc in Congress began to break apart. Farmers became a political minority. Other issues developed, and we began to talk of food policy rather than farm policy, more specifically, of the cost and quality of our food supply. Scientific input had ensured us of an adequate amount of food.

The old-line farm organizations were challenged by the rise of commodity groups like the National Association of Wheat Growers, the National Cattlemen's Association, and the National Milk Producers' Federation, and by new general farm organizations like the National Farmers' Organization and the American Agricultural Movement. But through coalitions and effective lobbying within the system, farmers maintained a degree of political power.

What are the issues now? Of course, farm prices, farm income, and saving the family farm remain on the list. But many food issues have come to the forefront, issues such as the price of food, the cost of price and income-support programs, dietary goals, world hunger, food stamp and nutrition programs, food safety, use of chemical preservatives in food preparation, pesticides, protection of the environment, preservation of prime farmland, control of wildlife that destroy farm animals, and the rights of farm animals. These issues were not put on the agenda by the old agricultural establishment that once controlled farm policy. These agricultural groups now share influence with a multitude of nonfarm special interest groups which exert influence over food policy.

Who Determines Food Policy?

The producer lobby must now compromise with agribusiness organizations, food distributors, consumer groups, groups concerned with hunger and nutrition, environmentalists, labor, and the clergy. A multitude of special interest groups are highly motivated and well-financed, and they have a stake in securing an abundant supply of high quality food at the cheapest price possible. Traditionally, farm policy was determined by compromise within the Farm Bloc. With the influence of farmers behind a compromised set of policies, it wasn't much more than a formality to get them officially established. This is no longer true. Coalitions must be formed. Trade-offs must occur. Producers must compromise with consumers and others and establish common ground. Nonproducer interest groups now influence food policy and help establish it.

In recent history, a "farm bill" has been passed every four years. The transition from farm policy to food policy is readily apparent when one discovers exactly who and what are involved in a "farm bill." The change in the title from the Agricultural Adjustment Act of 1933 to the Agricultural and Food Act of 1981 indicates the change in politics.

Coalitions Between Farmers and Nonfarmers

Population shifts have occurred. More people now live in urban areas and the makeup of the Congress reflects this fact. If policies acceptable to farmers are to be established, these policies must also be in the best interest of consumers and other influential food lobby groups. In addition, farm interest groups must be willing to back programs sought by nonfarm groups. This is necessary in order to form coalitions with these groups.

Farmers are interested in commodity programs which support farm prices and income. They are also interested in publicly supported agricultural research. But farmers and their organizations simply don't have enough votes to enact the programs. They need nonfarm support.

The food stamp and nutrition programs are of vital interest to urban and nonfarm rural Americans. Consumer and labor groups and welfare rights groups support these programs. Commodity programs and food stamp and nutrition programs, which also increase the demand for food, are the responsibility of the agricultural committees in the Congress which have farm and urban congresspersons on them. This makes for a classic trade-off. Farm groups support food stamp and nutrition programs in return for the urban groups' support of commodity programs. Coalitions are built among farm and nonfarm influential interest groups, and policy is established. Agricultural policy was once established by farm groups. Establishing food policy now requires the concurrence of many nonfarm groups.

Government Agencies

Traditionally, the **United States Department of Agriculture** has been the key government agency which proposed and administered farm policy. Price-support and income programs and food stamps and nutrition programs are operated by the USDA. Some argue that this cabinet level agency should no longer be in charge of food programs, that the operation of these programs should be switched to Health and Human Services, and the Agriculture Department should be the farmers' department in Washington. Removing food programs from the USDA would greatly diminish both its influence and its budget.

As food policy included more and more issues, many other government agencies became involved with it. The **Food and Drug Administration** helps to protect the quality of our food supply. The **Environmental Protection Agency** is concerned with the chemicals used on the farm and in food processing. Many of these functions were once a part of the USDA but were removed because of the USDA's alleged failure to administer them evenhandedly. In recent times of tight budgets, the **Office of Management and Budget** has been heavily involved in food policy. As we export more and more of our food overseas, food policy becomes involved in foreign policy. The **State Department** enters the picture.

In the past, food exports have been restricted because consumer groups feared that foreigners were bidding up our food prices. Some feared for an adequate domestic food supply. For decades, food has been used as a weapon to try to force our adversaries to change their policies. President Carter embargoed wheat to Russia to retaliate against the Russians' use of force in Afghanistan. This ability to control how much grain is exported and the effect such control has on grain prices has moved the use of food as a weapon to the forefront of food policy issues.

Importing foods which compete with domestic production is an important policy issue to cattlemen and dairy producers. Likewise, importing automobiles and other manufactured goods is an important issue to industry. Food and nonagricultural trade policy involves the **Commerce Department.** Exporting food affects the price we must pay to import electronic products, textiles, and automobiles. Trading food for these commodities generally makes them cheaper.

The price of energy affects the cost of producing food in the U.S. Therefore, the Organization of Petroleum Exporting Countries has influenced food policy. Periods of fuel scarcity raised the issue of whether or not to allocate enough fuel to agricultural producers so that they could continue to produce at least the same amount of commodities.

Food policy is complex. Many issues and interest groups are involved. Some are more influential than others. What was once domestic policy of primary concern only to farmers now includes international trade and foreign policy and is of primary concern to groups with many diverse interests.

Formal Policy-Making Process

Both farm and nonfarm interest groups act to influence the formal policy-making process of Congress. Successful efforts to influence food policy decisions require an understanding of that formal political process. In general, three centers of legislative power are involved in formulating farm and food policy in the Congress. These include: (1) leadership control, (2) content control, and (3) budgetary control.

Leadership

Leadership control is vested in the party steering committees in both chambers of Congress. These steering committees are made up of the ranking leaders in each party. The steering committees formulate party rules and strategies and assign party members to the other congressional committees. The majority party's steering committee also nominates the committee chairperson and proposes rules to govern floor action and committee procedure.

The party caucuses in each house are composed of all party members. These caucuses approve major rules proposed by the steering committee. In addition, the majority party's rules are usually accepted for floor action and committee procedures. This occurs because all committee chairpersons are from the majority party, and the membership of each committee reflects the partisan relationship of the whole chamber. So a majority of each committee is from the majority party.

Content Control

Agricultural Committees

Content control over farm and food legislation is generally held by the agricultural committees in each house. The Senate Committee on Agriculture, Nutrition, and Forestry has 18 members and is one of 15 standing committees of the Senate. The House Agriculture Committee has 41 members and is one of 22 standing committees of the House of Representatives.

Members of Congress who are assigned to the agricultural committees have more control over the content, form, and organization of farm and food legislation than do noncommittee members. Not only do they approve the farm and food proposals presented for consideration on the floor of each house, but they also have greater access to technical staff and to the relevant information used to make decisions and lead floor debate. Access to the relevant information can be crucial to successful legislative debates.

Each agricultural committee has a staff that gathers and organizes the information desired by the committee members. The agricultural committee chairpersons have the greatest control over farm and food legislation because they preside over committee meetings and control the staff that provides relevant information.

Hearings and Mark-up Sessions

On major farm and food legislation, both agricultural committees hold extensive hearings to allow all business and trade organizations, interest groups, and concerned citizens to express their views. After the hearings are complete and after proposals have been drafted by subcommittees or by the staffs of individual members, the agricultural committees hold "mark-up" sessions to condense all proposals and amendments into one proposal to be reported out of committee onto the floor. Representatives of the USDA attend the sessions to explain the administration's position on each provision as requested. Trade organization and interest group lobbyists communicate informally with committee members and their personal staffs behind the scenes to voice their positions on the language of specific provisions considered throughout the mark-up process. Only tentative decisions are made in this process. Thus all provisions are subject to reconsideration until the committee makes its final decisions.

Debates and Amendments

Floor action allows all members in each house of Congress to debate and amend the bills reported out of committee. Coalition leaders are hard at work forging compromises to gain enough votes to pass or defeat the bill or to amend it into a more acceptable form. The administration liaisons work behind the scenes. The White House may become involved through visits to congressional sessions and through veto threats to gain passage of a more acceptable bill. Meanwhile, interest groups and trade organization lobbyists informally attempt to gain support for their preferences. After completing consideration of all the amendments, the full body moves for final action. After the first chamber completes action, its proposal, called an "engrossed bill," is sent to the other chamber for consideration.

Conference Committees

Most comprehensive farm and food policy bills pass each chamber of Congress with differences that must be resolved before the bill is sent to the President. Major differences are usually ironed out in conference committees. Each chamber selects a delegation for the conference committee. The conferees usually include committee chairpersons, ranking majority and minority members of the committee, and other committee members who have been extensively involved with the bill. Individuals, interest groups, and the administration continue to communicate informally with the committee throughout this process.

In general, conferees may negotiate only areas of disagreement between the two versions of the bill. The final legislative passage of the bill is completed when both chambers accept the conference committee recommendations. The proposal then becomes an "enrolled bill" and is sent to the White House for presidential action.

Once the enrolled bill is delivered to the White House, the Office of Management and Budget circulates it to all concerned agencies and formal advisors. Their views and statements are considered together with recommendations from informal advisors on the merits of the President's options. The President's options are to: (1) sign the bill, (2) veto the bill, (3) allow the bill to become law unsigned when Congress is in session, or (4) allow the pocket veto to take effect by not signing the bill when Congress is not in session.

The Budget Process

In recent years, budget concerns have begun to influence the nature and scope of farm and food policy decisions. All farm and food policy proposals are reviewed by the Appropriations Committees and must meet the budget requirements proposed by the full Congress. During the 1981 farm bill debate, the Senate Agriculture Committee pared down its original proposal in order to report a version of the farm bill that would not risk the cutting process of the Budget Committee. Therefore, budgetary control does influence the nature and level of funding for farm and food policy legislation.

Presidential Preparation

The budget process is composed of two basic steps—presidential preparation and congressional legislation. The presidential preparation phase begins almost one and one-half years before the fiscal year begins. Since 1921, most of the executive control over the budget has been centralized in the Office of Management and Budget (OMB). Before then, each agency submitted individual budgets directly to Congress.

In the spring of each year, the administrative agencies begin to prepare their budget requests for existing programs and changes. During the summer, the OMB reviews the requests, sets ceilings, and may ask each agency to defend its requests. Requests are put into final form during fall and winter, prior to the President's annual budget message given toward the end of January.

Congressional Committees

In the legislative phase, control over the budget is vested in three standing committees of each house. These committees include the Budget, Appropriations, and Finance Committees in the Senate and the Budget, Appropriations, and Ways and Means Committees in the House.

The Congressional Budget Act of 1974 establishes congressional budgetary procedures. These procedures call for the Congress to consider budget totals before it considers action on individual appropriations. The two Budget Committees review these total budget limits and draft requirements for major spending and finance categories. The Appropriations Committees draft and evaluate specific spending bills. The Senate Finance and House Ways and Means Committees draft and evaluate specific tax and revenue raising proposals. All must be within the budget requirements accepted by Congress and the President.

Process Sequence

The legislative component of the budget process begins with the President's message. In the first phase, all standing committees must report estimated appropriations to the Budget Committees by March 15. In the second phase, the Budget Committees must have reported their first budget resolution to the floor for passage by May 15. This first resolution tentatively sets the total budget and limits for each budget category. In the third phase, the standing committees rework their appropriations to bring each function in line with the budget limits. By September 15, a second budget resolution which may revise the first is passed. Strictly interpreting the Budget Act, Congress may not appropriate more money by function or in total than it adopts in its second budget resolution. If these budget requirements are not met, the Budget Committees may begin a cutting process to bring all appropriation proposals into line.

The Executive Branch and interest groups are continually communicating with the Congressional Budget decision makers. Presidential veto threats occurred frequently during the 1977 and 1981 farm and food policy debates and eventually altered the content of the legislation.

Continuing Resolutions

If final appropriations are not passed by September 30 (October 1 is the beginning of the fiscal year), a "continuing resolution" is passed and signed by the President. Continuing resolutions are temporary appropriations for a specific time period. They are usually based on appropriations for the previous year and include minor changes. In the past two years, final appropriations were not completed until after the beginning of the fiscal year. Therefore, all federal agencies operated under continuing resolution appropriations until the final decisions were made.

Implementing and Evaluating Policy

The responsibility for implementing farm and food policy rests primarily with the administration. The Secretary of Agriculture is responsible for developing most of the administrative rules for implementing farm and food legislation. These rules must be developed within the flexibility written into the legislation by Congress and under guidance from the White House. In addition, farm and nonfarm interest groups continually attempt to influence the Secretary's administrative decisions.

The responsibility for evaluating the impacts of farm and food policies rests within all branches of government. The administration may revise administrative rules whenever evaluations dictate. All revisions are subject to the Administrative Procedures Act, but beyond these limits, farm and food program rules may vary from year to year depending on circumstance and political pressure. The recent Payment-in-Kind Program was essentially conceived, designed, and implemented totally by administrative order, underscoring the flexibility given the Secretary in the 1981 Act.

The Congress has "oversight" responsibility, and from time to time it conducts hearings to make sure the administrative agencies are implementing the intent of the law. If they are not doing so, the Congress may revise the law to alter the implementation. In addition, the General Accounting Office, which is not an administrative agency but is responsible to Congress, audits, studies, and analyzes the implementation of all laws and expenditures upon Congressional request.

In addition, farm and food lobby groups have learned that many agencies outside of the USDA influence the implementation of farm and food policies. For example, both the Environmental Protection Agency and the Food and Drug Administration write administrative rules and regulations that directly influence the farm and food system.

The judicial system has the authority to make final evaluations. The courts may judge whether implementation of a policy is arbitrary and lacks uniformity, whether the administrative rules are in accordance with the law, and whether the law is constitutional. So from time to time the courts have been influential in setting farm and food policy.

Future Political Environment

The politics of the farm and food system have been in transition during recent years. This evolutionary process will continue well into the next century. As the lines of compromise are redrawn over time, traditional institutions are likely to be continually scrutinized and redefined.

Clearly the old agricultural establishment no longer has exclusive control of farm and food policy. Many argue that it will never regain control. Numbers alone would support that contention. Less than 2 percent of the U.S. population is engaged in producing food and fiber. This translates into only a few votes in the ballot box. Agriculture's political power is fragmented. Farm organizations and commodity groups openly disagree and engage in protecting their own turfs. Division within the establishment weakens the whole.

When the old agricultural establishment was in control, its members practiced majority politics. Producer organizations ignored or bad-mouthed agribusiness and detested the middleperson. They made little, if any, effort to influence the consumer. To many producers, the consumer was the enemy rather than the customer. Few attempts were made to build coalitions or to court nonfarm groups through educational and public relations activities.

This approach may have worked in the "good old days" but with agricultural producers in the minority, it will not work any more. Many farm organizations are aligned with one political party. Consequently, one party tends to take them for granted and the other one tends to ignore them. A lesson remains to be learned from the bi-partisan nature of the old Farm Bloc. But change has been in the wind. There are now fewer farmers and many of them are becoming more interested in the politics of the farm and food system. Their economic environment is being altered politically. Politics adds a degree of instability to agriculture which is second only to the weather. Witness only a modest acreage reduction program in 1982, then in 1983 the most massive acreage reduction program in the history of U.S. agricultural policy. This was carried out by the same administration under the same farm legislation. A philosophically free market administration operating under the 1981 Agriculture and Food Act abruptly changed its agricultural policy.

Economic Policy

Agriculture is not immune from general economic policy. A long sustained economic recovery with relatively low inflation and real interest rates would improve the farm economy, if for no other reason than that such a recovery would moderate the value of the dollar in terms of foreign currencies. This would expand food exports and strengthen farm prices, but it would also increase the cost of imports. Global politics affects the economic environment in which agriculture operates. Agricultural policy is important to farmers but so are national and international economic policy.

Budgetary concerns will play a major role in limiting the size and scope of 1985 farm and food legislation. Concern over record federal deficits which are approaching $200 billion annually will compound the problem.

Congress is usually inclined to accept presidential preferences on the budget during the President's honeymoon, particularly after a wide election margin. In 1981, the Congressional Budget Committees accepted the President's proposals without subcommittee review. As a result, provincial budget interests were bypassed. In the President's third year, the congressional budget did not reflect the President's priorities. After the 1984 election, either the President or the Congress may be vindicated. As a result, the budget priority given to the 1985 food and agriculture proposals will depend in part on the economic environment during the campaign and on the election results.

Many argue that today's agricultural policy does not fit the economic realities of the '80's, that it was designed for a domestic market and we are now dependent on international trade. Agriculture must learn to operate competitively in the international marketplace or scale down its level of grain production by roughly one-third. The foreign dimension and the use of food as a foreign policy tool add to the political instability which agriculture faces.

The days of efficient family farmers operating just inside the farm gate are over. It will take more than efficiency to survive the political and economic transition occurring in the system. Farmers and their organizations are beginning to discover this. The events of the past decade have awakened some of those in the trenches to the events that may lie ahead.

Planning Farm Policy

Traditionally new farm legislation occurred every four years, giving producers a four-year planning horizon. The 1981 Act is discretionary. It gives the Secretary of Agriculture the authority to move from modest intervention to record land retirement. In addition, the annual budget-making process can produce changes in farm programs. The planning horizon has gone from four years to less than one year, but even four years is not consistent with the investment process in modern mechanized agriculture. The 1983 wheat program was announced about four months after the winter wheat crop was planted, giving those wheat producers a minus four months planning horizon.

The bottom line in developing the 1981 Farm Bill was the cost to the Federal Treasury. A tight budget dampened the amount of funds available for farm programs. Many argue that the days of dipping into the Federal Treasury for billions of transfer payments to agriculture are drawing to a close. Yet, 1983 program costs approached $30 billion in a so-called tight budget year, a tenfold increase in three years. Is this the high-water mark? That depends in part on agriculture's political clout. Much has been written about the decline in agriculture's political power, but agriculture possesses enough political power to curb the market on the downside, to place a floor under prices.

Developing Long-Term Policy

Such events have led to early discussion on the 1985 Farm Bill. Agricultural forums and attempts to decrease the fragmentation within agriculture are underway. Many groups are calling for long-term solutions rather than piecemeal, short-term, emergency stopgap solutions.

In 1983, agriculture marked the golden anniversary of the Agricultural Adjustment Act of 1933. Is the politics of the system such that the AAA will be amended on an emergency basis once again in 1985, or will 1985 be a watershed year?

Should we insulate agricultural policy from the day-to-day whims of the political system? How could we achieve a long-term comprehensive set of agricultural policies consistent with the length of the planning horizon needed to make investment decisions in today's agriculture? More fundamental, is the political system itself capable of developing long-term policy?

In his farewell address, President Carter lamented the fact that we had become a government of special interests and asked, "Who is looking after the good of the whole?" Farm and food policy has been short-term and inconsistent, frequently switching back and forth between concerns about increasing production to maintain an adequate food supply and decreasing production to eliminate surpluses. The record has been one of reacting to crisis and enacting legislation on an emergency basis. Special interest groups have seen to it that agricultural prices are moderated upward at the insistence of producers and downward at the insistence of consumers. Such a record demonstrates the government's lack of ability to develop a long-term comprehensive set of food and agricultural policies.

Some suggest that a new institution is needed to develop a long-term comprehensive set of policies for the farm and food system. This would call for a new approach to developing agricultural policy. Models that come to mind are the Farm Credit Administration and the Federal Reserve System, quasi-independent bodies that are partially immune from day-to-day politics. Individuals of stature from across the farm and food system would be selected by the President for terms longer than presidential terms, and not concurrent with them, and confirmed by the Senate. Congress would pass enabling legislation which would delegate authority to develop agricultural policy to the new institution.

This would be a distinct departure from past policy and would threaten the turf of the congressional agricultural committees, the Secretary of Agriculture, the traditional farm organizations, and nonfarm groups. Thus it would be politically feasible only if a groundswell of grassroots support for it emerged throughout the farm and food system, from input supplier to producer to consumer. Such a distinctly different approach may, however, be required if long-term agricultural policy is to be developed and if 1985 is to be a watershed year.

Control of Food Supply

If current trends continue, control of our food supply will be concentrated in fewer and fewer hands. Perhaps as few as 200,000 commercial farms will be producing 95 percent of our food supply in the year 2000. A highly concentrated integrated farm and food system will take on a new political complexion.

Clearly the need for producers to become more politically involved is evident and 200,000 is a small enough number that farmers may get their political act together. Suppose agribusiness joins with producers to develop a political coalition? The smaller the number of producers and the more integrated the system, the easier it is to form such a coalition. Could a coalition across commodities and including agribusiness become the new agricultural establishment and gain back more of the control of farm and food politics?

Conflicting Goals

A basic conflict exists between the consumer's goal of an abundant supply of high quality food at the cheapest price possible and the producer's goal of maximum income. How could this conflict be resolved? That depends on the politics of the system, at least to a degree. Currently, farmers argue that the U.S. is following a cheap food policy, and they surmise that is true because food policy is being made in an urban society where consumers have the most clout. If producers and agribusinesspeople begin to practice effective minority special interest politics, the scale could be tipped towards returns in the system rather than low food prices. It is not clear that the agricultural establishment has permanently lost control of farm and food policy. Political power is more than numbers. It incorporates organization, economic clout, and the ability to threaten. Control over our food supply certainly constitutes an ability to threaten. Crosscurrents are blowing through the system. The politics of agriculture are changing. The outcome is not at all clear.

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THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

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Domestic Food & Nutrition Programs: Sorting Out the Policy Issues

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THE NEWS IS FILLED with stories of hunger yet the United States has a superabundance of food. During 1983 the U.S. will probably spend more to reduce its production of food than it will spend on food assistance programs for the needy. The media continue to report hungry people standing in line for a meal. Community leaders appeal for private donations to soup kitchens. West Germany sends food to the hungry in Detroit. While cuts are made in national Food and Nutrition Programs, the President appeals for increased food donations. Why does hunger still exist?

The numbers of U.S. citizens living below the poverty standard have been increasing over the past several years. Of the 227.4 million people living in the United States in March of 1982, 31.8 million (14 percent) were living below the official poverty line. Looking more closely we see that 12.3 million children now live in poverty. This is 20 percent of the nation's 62.5 million children. In addition, of the 25.2 million persons aged 65 and over, 3.9 million (15 percent) live in poverty. Over half of the people living in poverty, 16.2 million, are children or the elderly (Bureau of the Census, 1982). Local, state, and federal assistance to these people takes a variety of forms, ranging from general welfare programs such as Aid to Families with Dependent Children, to food programs such as food stamps and school lunches, to more specialized programs such as energy assistance and nutrition education. This paper focuses only on the Food and Nutrition Programs (FNP) sponsored by the federal government, currently the center of much political discussion. It points out the major policy issues surrounding these programs and suggests various alternatives to them, depending upon national priorities. It begins with a short history of the major FNP. The issues section focuses on the objectives of the programs, the relation of the FNP to the budget and fiscal policy, and the jurisdictional responsibility for them.

History of the Food and Nutrition Programs

The federal government administers many different food and nutrition programs, each with various objectives. These objectives include:

1. supporting farm incomes,
2. eliminating hunger, and
3. improving nutritional status.

A fourth objective is implicit in the first two, namely distribution of income to lower income people.

Commodity Distribution

In the 1930's and again in the 1950's, the nation had large surpluses of farm products while farm incomes were low. Both farmers and urban dwellers were united in support of the government's decision to distribute these surpluses to the needy while at the same time supporting farm incomes. Commodity distribution was introduced in 1935, discontinued during World War II when the country moved to rationing, and then reinstituted after the war. Until the early 1970's, commodity distribution—administered at the county level—was the basis of government FNP. During the late 1960's the complete package contained 24 commodities which provided a nearly balanced diet and had a retail value of $16.14 per person per month in 1969. However, many of the commodities were not consistently available and others, such as dried eggs, were not accepted by participants. As a result, the average county distributed only 18 commodities in 1970, many distributed even fewer, and families in the program continued to suffer nutritional deficiencies (Madden and Yoder, 1972). With the introduction of the Food Stamp Program in the 1970's, commodity distribution was nearly phased out. However, a modified version of the program is currently being used to distribute surplus dairy products.

Food Stamp Program

The Food Stamp Program, also begun in the 1930's with the same objectives as the commodity distribution program, was eliminated during the second World War. When it was reinstituted in the 1960's, the Food Stamp Program was designed to meet new concerns within the nation. At that time, food scarcity and high farm-level prices had reduced the level of farm surpluses and lessened the need to support farm incomes, while the "War on Poverty" was calling attention to hunger and

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poverty in the nation. A participating family was required to purchase the stamps, paying an amount estimated to be what the family would have spent on food. However, the face value of the stamps was greater than the purchase price so the family was able to buy more food than it could have bought without the stamps. Revisions in 1970 set a national income standard and based the amount of stamps distributed on the cost of a "Thrifty Food Plan" and on family size. Since all counties were required to offer the program in 1974, commodity distribution was for the most part phased out. In 1977 the purchase requirement was eliminated, and the amount which families would have paid for the stamps (30 percent of their net incomes) was deducted from the value of the stamps they received.

In addition to providing more food for the participating families, food stamps effectively increase family income. When families are provided stamps with which to buy food, they can use their other income for housing, clothing, school supplies, etc. Thus food stamps are not only a food supplement but also an income supplement. Benefits decrease gradually with increasing incomes so that families are not forced to choose between jobs or welfare. Thus the program contains fewer work disincentives than other welfare programs.

To be entitled to food stamps in 1982 a household must meet both a gross and net income requirement. It must (1) have income of less than 130 percent of the poverty line (about $1,000 per month for a household of four), (2) have assets worth less than $1,500 (excluding the value of a home), (3) meet several criteria in regard to work, and (4) conform to the definition of a household. The criteria for the elderly and the disabled are more liberal. The value of stamps received is based upon the cost of the USDA Thrifty Food Plan for each family size less 30 percent of the household net monthly income (see Table 1). In August of 1980 the average monthly payment was $39 per person. The average income of recipient households was $326 per month, with 87 percent of the households showing gross incomes below the poverty line. Three-fourths of all recipient households had no countable assets; 62 percent of all food stamp recipients were children, elderly, or single parents (FNS, 1981).

Table 1—Family Size, Income Levels, and Food Stamp Benefits, January through June, 1983.

Persons in household	*Max. gross monthly income*[1]	*Max. monthly food stamp allotment*[2]
1	$ 507	$ 75
2	674	139
3	841	199
4	1,008	253
5	1,175	300
6	1,342	360
7	1,508	398
8	1,675	455
each additional member	+ 167	+ 57

[1] For 48 contiguous states, D.C., Guam, the Virgin Islands.
[2] Allotments for Alaska, Hawaii, Guam, and the Virgin Islands are higher.
Source: USDA, *News*, September 17, 1982.

Supplemental Program for Women, Infants, and Children

While the Food Stamp Program concentrated on eliminating hunger, it failed to provide adequate nutrition for groups with special nutritional needs, particularly for pregnant and nursing mothers, infants, and children under five. The Supplemental Program for Women, Infants, and Children (WIC), created in 1972, grew out of the Supplemental Commodities Program which distributes specific commodities. The WIC issues commodities or vouchers for specified foods which can be redeemed at participating food retailers (Longen and Allen, 1982).

In order to be eligible for the WIC program, participants must be certified by a health clinic to be nutritionally at risk. Their incomes may not exceed 185 percent of poverty level. WIC recipients may also be eligible for food stamps and about half of them participate in both programs. WIC benefits averaged $29 per recipient per month in fiscal 1982 (FNS, 1983).

Research indicates that this program is quite successful in meeting the nutritional needs of the participants and in improving their health (Allen, 1982). However, Congress has imposed a limit on the size of the program so that many large cities currently have waiting lists of eligible mothers and children.

Child Nutrition Programs

The National School Lunch Program was established ". . . to safeguard the health and well-being of the Nation's children, and to encourage the domestic consumption of nutritious agricultural commodities and other food" (Longen, 1980). During the 1930's, federal support of this program consisted entirely of surplus agricultural products. Because a large percentage of young men were found physically unfit to be soldiers during World War II, Congress increased program support and included cash disbursements. In the 1970's, special assistance was increased, mainly to ensure that all low income students would obtain free or reduced price lunches.

Children from families with incomes below 130 percent of poverty level are eligible for free meals, while reduced price meals are available to those with family incomes below 185 percent of poverty level. Even

Table 2—Per Meal Cost Distribution for the National School Lunch Program, 1981-82.

Type of meal	*Federal cash payment*	*Value of donated commodities*	*Student payment*
Paid	10.50¢	17¢	90¢
Reduced price	69.25	19	40
Free	109.25	19	0

Source: Hiemstra, personal communication.

"paid" lunches had a federal subsidy of 10.5 cents in cash and 19 cents in commodities for lunch during the 1981-82 school year (see Table 2). In 1982 private schools with an annual tuition of over $1,500 per student were excluded from participation (Longen and Allen, 1983). Since most public schools have federally supported lunch programs, 90 percent of primary and secondary students in the country have access to subsidized lunches. A recent study found that the school lunch program has a positive impact upon the nutrient consumption of school children. This impact is greater for low-income children (Akin, et al., 1983).

Free breakfasts, free summer meals, and subsidized child-care food programs have been added to the child nutrition program, mainly with the same objective of providing food to low income children. The Special Milk Program was established in 1954 to provide milk in addition to that which was regularly served under the lunch and breakfast programs. Children who qualified for free meals also could receive milk free while all other children could receive the milk at reduced prices (Longen, 1980). The Omnibus Reconciliation Act of 1981 limited participation in the Special Milk Program to those schools which do not participate in other child feeding programs. As a result, milk distribution under this program fell from 503 million half-pints in the last quarter of 1980 to 72.6 million during the same period of 1981 (Allen, 1982). There is now a movement in Congress to change this provision since the U.S. is holding large dairy surpluses.

Costs of the Food and Nutrition Programs

Child Nutrition Programs cost the federal government about $3.7 billion (including commodities) in 1982. Most of this amount went for the National School Lunch Program, which serves about 23 million children each month during the school year, but about $300 million each went for school breakfast and child-care food programs and nearly $100 million was spent on summer food programs for children. The WIC Program cost about 1 billion in 1982 for 2.3 million participants a month. Various direct commodity programs, including programs for feeding the elderly, added about $226 million more. Federal costs of the Food Stamp Program in 1982 were about $10.4 billion. The program served an average of 20.6 million people a month (Allen, 1983). Actual participation in the programs is difficult to measure since numbers vary by month and benefits vary according to need. Table 3 presents federal expenditures for food assistance in recent years.

Issues of Concern in the Food and Nutrition Program

Maintaining Farm Incomes

Commodity distribution, food stamps, and the school lunch program originated during the Depression when farmers were producing surpluses but receiving low incomes and when many U.S. citizens faced increasing hardship and poverty. The food programs begun during that period attempted to alleviate farm-family poverty and, at the same time, to provide food to the needy. The increased demand for food resulting from government food distribution increased farm prices and favorably affected farm incomes. It should be recognized that other major farm price and income support programs were instituted at the same time. These food programs support farm incomes by expanding demand. The best estimates are that discontinuation of the programs as they existed in 1977 would have reduced food expenditures by about 2 percent (Hiemstra, 1978).

The food program has a substantial effect on prices for some agricultural commodities while it has very little effect on others. Meat and dairy products, especially the latter, receive substantial support from government food programs. Most child nutrition programs provide large quantities of dairy products, which accounted for 32 percent of the total dollar value of school lunches in 1975, while meat, fish, and poultry accounted for another 22 percent (Putnam and VanDress, 1982). During 1982 a widely publicized special dairy program

Table 3—Federal Cost of USDA Food Programs, Calendar Years 1978-82.

Program	*1978*	*1979*	*1980*	*1981*	*1982*
	$ million				
Food stamp	8,347	7,111	9,004	10,968	10,375
Bonus stamps[1]	5,261	7,108	—	—	—
Puerto Rico assistance[2]	—	—	—	—	396
Food distribution					
Needy families	13.7	22.2	23.5	35.3	46.0
Schools[3]	577	720	967	834	797
Other[4]	64	85	115	108	180
Cash in lieu of commodities	—	—	85	112	118
Child nutrition[5]					
School lunch	1,877	2,101	2,395	2,283	2,244
School breakfast	191	243	311	330	328
Special food[6]	246	288	338	401	357
Special milk	139	146	137	72	19
Nonfood assistance[7]	—	—	18	9	—
WIC[8]	422	569	783	863	1,005
Total[9]	8,790	11,283	14,177	16,015	15,865

[1] Value of stamps received above what the family paid, discontinued in 1979.

[2] Puerto Rico switched from the Food Stamp Program to a nutrition assistance program on July 1, 1982.

[3] Includes child care centers and camps participating in the Child Care and Summer Food Service Programs.

[4] Commodity Supplemental Food Program, Nutrition Program for the Elderly, and donations to charitable institutions.

[5] Cash expenditures. Includes money donated for local purchase of food.

[6] Divided into Child Care Food Program and Summer Food Service Program in fiscal 1976.

[7] Nonfood assistance (equipment procurement) was terminated on October 1, 1981.

[8] Special Supplemental Food Program for Women, Infants, and Children. Includes food and administrative costs.

[9] May not add due to rounding. For 1978 and 1979 excludes those stamps paid for by recipient.

Source: Joyce Allen, "Domestic Food Programs," *National Food Review*, NFR-19 (Summer 1982) and NFR-23 (Summer 1983).

distributed nearly 300 million pounds of surplus dairy products to the needy (Allen, 1983) and increased donations of dairy products to schools. Inexplicably, just prior to this, the federal government took action to virtually eliminate the Special Milk Program which provided an additional half-pint of milk to school children.

Is expanding demand for farm products or diverting surplus food in order to support farm income an appropriate policy objective for Food and Nutrition Programs? In answering this question we need to discuss the various purposes for expanding food demand. (1) Expanding food demand improves farm prices and farm incomes in general. Farm incomes are variable but in many recent years per capita incomes of farm families have been comparable to those of nonfarm families. In addition farm benefits tend to be in proportion with output, thus benefits tend to go to the larger farmers. (2) Expanding demand for specific products temporarily in surplus may contribute to price stability. Perhaps the appropriate objective is countercyclical price stability, i.e., maintaining price stability not only when there are surpluses but also when there are scarcities or inflation. Overall, price stability probably benefits both farmers and consumers. (3) Expanding demand can be used to dispose of surplus commodities accumulated under farm price support programs. Surpluses overhanging the market depress farm prices. In addition, storing stocks is expensive and it may be difficult to justify spending money to hold stocks off the market or destroying stocks while people are in need of food.

Adequate Food and Nutrition

Food stamp households spend more on food per member than nonparticipating households spend, even when nonparticipating households have incomes half again as large as do the food stamp households (HNIS). While food stamps increase total food consumption, they do not necessarily improve nutrition since there is no guarantee that families will purchase well-balanced diets with the stamps. In 1977 a nutrition education program was added to the Food Stamp Program but this was recently eliminated. Other FNP, especially the Child Nutrition Programs and WIC, are now directly targeted to the nutrition objective. Evaluations of these programs have shown improvements in the recipients' nutritional status.

In order to assess the worth of nutritional assistance programs we must address two basic questions:

1. Does society (the nation) benefit from an adequately nourished population, particularly from well-nourished children?
2. If society does benefit, does it have a responsibility to provide adequate nutrition?

Inadequate nutrition affects health, longevity, resistance to disease, productivity, and the capacity to learn. There is ample evidence that good nutrition is particularly important for a child's physical and mental development. Since children are the future of any society, well-nourished children would seem to be a top priority.

If we accept a social responsibility for children and the belief that a person's nutrition benefits not only that person but other individuals as well, the policy issue becomes one of determining the most effective means of achieving adequate nutrition. Ample evidence demonstrates that knowledge of nutrition and motivation are important factors in obtaining proper nutrition (Davis, 1982). Thus if adequate nutrition is the objective, programs designed to deliver nutritious food to those who need it most and to provide nutrition education seem to be the most economical methods of achieving it. The Food Stamp Program could be modified to emphasize the purchase of foods which provide nutritionally adequate diets (Lane, 1980 and USDA, 1962). This would complicate its administration, particularly for the food retailers. However, the effects on nutrition might make the additional administrative costs worthwhile. The WIC program, which is recognized as being nutritionally effective (Allen, 1982), issues vouchers for specific foods and includes a nutrition education element. Perhaps the WIC could serve as a pilot project for modifying the Food Stamp Program to improve nutritional effectiveness.

Income Distribution

Even though all FNP provide subsidized food, they also provide indirect income supplements for the recipients because such families are able to shift part of their money income to nonfood purchases. (An example of a direct income supplement program is Aid to Families with Dependent Children.) Currently we in the United States do not have a clearly outlined income distribution policy. As a result, income distribution is a somewhat haphazard outcome of welfare programs, FNP, social security, unemployment compensation, workers' compensation, Medicare and Medicaid, and a somewhat progressive tax system. The most fundamental question is, what should the policy of income distribution be? From this follows the question which concerns us in this paper, should FNP be a major part of an income distribution policy or should the two be separated? The issues involved concern (1) welfare levels, (2) employment opportunities and requirements, and (3) cash versus in-kind food grants.

Income Levels

At what level should income supplements be provided? Although we have never answered this question directly, there are two national indicators of what the socially acceptable minimal income level might be. One is an income above poverty level, which was $9,287 for a family of four in 1981. The second indicator is the national minimum wage of $3.35 per hour, which would result in a yearly income of approximately $7,000 for a single worker. However, many workers do not earn minimum wage, so that even with a full-time wage earner a family may still live in poverty.

Work Requirements

While it is generally agreed that those who are unable to work should be guaranteed some income, policy questions arise concerning the working poor, the unemployed, and those who are unwilling to work. Should the working poor be guaranteed an income or wage supplement which raises them above poverty level? How do we define who is a worker? A teacher and a homemaker perform many of the same child rearing tasks yet one is paid a wage while the other is not. Should homemakers (especially those with preschool children) receive incomes from the work they perform?

Researchers estimate that a one percent increase in unemployment adds about one million persons to the Food Stamp Program (Senauer, 1982). Therefore, policies which generate employment are an alternative to income supplement programs. Many of those currently unemployed would be willing to work if jobs were available. Should people have a "right to work"? If jobs are not available, do the unemployed have a right to an income supplement which helps to provide the basic necessities of life? A possible alternative for all those who are able to work would be guaranteed employment at a wage above poverty through government employment or a wage supplement at a wage above poverty.

Does providing food and other necessities to the unemployed reduce the incentives to work? The empirical evidence seems to be yes for some people and no for many others. Many assistance programs clearly discourage working by withdrawing benefits when the recipient begins earning an outside income. In some programs the benefits lost equal from 50 percent to more than 100 percent of outside earnings. In this respect, the Food Stamp Program, in which the loss of benefits equals 30 percent of earnings, deters recipients from working less than other programs do. Therefore, unlike most welfare programs, the Food Stamp Program provides assistance to the working poor. In 1980, 10 percent of heads of households receiving food stamps were employed full-time and 5 percent were employed half-time (FNS, 1982). Similarly, food assistance to childcare centers can be regarded as an incentive for women to work.

What about those who are able to work but are unwilling to do so? Should they be required to work as a condition for receiving benefits? Is a work requirement realistic in the face of high unemployment? Contrary to public opinion the Food Stamp Program does include work requirements for the able bodied and it restricts the eligibility of those who voluntarily quit a job or go on strike. Advocates claim that work provides dignity to the recipient, on-the-job training, and useful services for local areas. Critics say that it costs more to set up and oversee the work assignments than the results are worth and that only menial jobs are provided that do not yield useful training. The results so far provide some support for both arguments.

Food Vs. Cash Assistance

Current income supplements range from cash under AFDC, to "near money" food stamps, to vouchers redeemable for specified items only under WIC, to actual food commodities. Several proposals have included the suggestion that cash payments be substituted for food and other categorical assistance as part of a general reform of welfare programs. Former President Nixon's negative income tax proposal is one example of such a proposal. In 1982, Puerto Rico received a block grant for nutrition assistance and opted to replace food stamps with direct cash payments. Since there is no assurance that the cash will be used for food, Congress has advised Puerto Rico that the program must adopt a form other than cash assistance in the next fiscal year (Allen, 1983).

Two arguments are made in favor of cash assistance: (1) the recipients will get more satisfaction from the money because they will be able to purchase what they want rather than receiving what they may not want, and (2) the administration of welfare programs will be simplified, reducing costs. These arguments assume that (1) income distribution is the only objective of assistance programs, (2) recipients know what is good for them, and (3) taxpayers' preferences concerning the use of funds should not count. Taxpayers may be willing to ensure a minimum diet for everyone but they may not be willing to allow the recipient of such assistance to buy whatever he/she wishes. Those who emphasize the objectives of providing food and nutrition, or of maintaining farm incomes, might favor adding more restrictions to the FNP rather than converting the programs to cash (cashing out). At the same time, perhaps the nutritional effectiveness of existing programs could be improved with the addition of companion nutrition education, thus increasing recipients' knowledge of what is good for them.

Fraud, Errors, and Administrative Costs

A government task force identified about $1 billion worth of fraud or misuse of funds in the FNP during 1981. The largest errors were in issuing stamps, especially replacing lost stamps, and in determining eligibility for the programs (FNS, 1982). To date, almost no effort has been made to verify the incomes stated on the application forms for the school lunch program. The error in this program may run as high as 35-40 percent (Bureau of the Census, 1982). The states are responsible for direct administration of these programs and they share the administrative costs with the federal government. The current administration budget proposals would pressure the states to considerably reduce their errors in issuing food stamps or to pay for the costs of such errors.

Current federal and state costs for administering these programs run 2-3 percent of the value of the benefits for school lunches, less than 10 percent for food stamps (not much different than AFDC), and 20 percent for the WIC program (Hiemstra, letter). Since increasing restrictions on a program increases administrative costs, the problems and costs of eliminating fraud and error may be substantial. It might seem logical to spend no more than a dollar to save a dollar of misused funds, especially if the errors were borderline cases. Since the integrity of the program is at stake and the misuse of government funds is very unpopular, the public may consider the additional costs necessary in order to achieve integrity in the program.

The Budget and Fiscal Policy

The Reagan administration has attempted to reduce the total budget, to increase defense spending, and to cut taxes. So far the administration's program has resulted in a large budget deficit which is believed to cause high interest rates and discourage business expansion and consumer borrowing. Much of the current pressure to reduce the budget deficit and to pass a balanced budget amendment results from concern about the negative effects of budget deficits on business activity. However, a balanced budget requirement might seriously handicap government efforts to assist the unemployed during recessions. In addition, bookkeeping conventions could probably be used to circumvent a balanced budget requirement.

The curent administration's attempt to cut the size of the budget while increasing defense spending has focused attention on the trade-offs which must be made among funding for various programs. The administration has proposed that cuts be made in the FNP, cuts such as delaying cost-of-living adjustments, reducing fraud and abuse, and eliminating the "nonneedy" by tightening eligibility requirements. While making these cuts, the government has increased spending on programs to reduce food production. The above discussion makes it clear that questions concerning the size and funding of the FNP and other assistance programs cannot be separated from general fiscal policy.

Jurisdictional Responsibility

The current administration's "New Federalism" proposes to shift responsibility for many social programs from the federal government to the states. The arguments to shift the FNP to the states include the following rationale: (1) the shift would reduce the federal budget, (2) the state and local governments are closer to specific problems and they could design programs to meet local needs and circumstances, and (3) if each state had control over its own FNP, it would have an incentive to more carefully administer the programs, reducing fraud, errors, and costs.

The bases for arguments opposed to the shift include: (1) the states are in no position to take on additional financial responsibilities, (2) the programs' costs are highly cyclical and the federal government is in a much better position to deal with cyclical programs as part of monetary-fiscal and employment policy, (3) the food programs would be disconnected from the farm surplus disposal programs, (4) inequitable variations in benefits among states would result and such variations would possibly result in migration toward the states with higher benefits, and (5) income distribution policy should not be dealt with on a state basis because of the large differences in incomes among states.

The FSP is almost unique among the welfare programs in setting a uniform national standard for eligibility and benefits. Contrast this with the differences in maximum Aid to Dependent Children payments, which for a mother and one child are $85 per month in Texas and $327 in Michigan. Since block grants set a limit to the amount of money available, each state must select programs, design eligibility criteria, and set benefits so as not to exceed the budget allocation. As a result, programs, eligibility, and benefits will vary among states. People who were previously eligible for a specific program may be dropped from it later on. There were 13 percent fewer participants in Puerto Rico's nutrition assistance program in the first quarter of 1983 than in the Food Stamp Program a year earlier. Puerto Rico's block grant for nutrition assistance is funded 25 percent below the level of the Food Stamp Program (Allen, 1983). WIC has now nearly become a block grant because an expenditure limit has been set on the program.

A further question of jurisdiction concerns which federal department should administer the FNP. Currently the major FNP are administered by the Department of Agriculture (USDA). Some observers argue that because the USDA is primarily concerned with farming interests rather than with nutrition and welfare, it should not control the FNP. However, the USDA now views its mission more broadly as directing a coordinated farm and food policy rather than serving only farm interests. The USDA contributes to ensuring nutritional adequacy through a set of complementary policies and programs for agricultural research and education, agricultural production and surplus disposal, nutrition education, food marketing and distribution, and food safety.

The USDA had administered the major FNP since their inception in the 1930's and it has developed considerable expertise for delivering the programs effectively. Transferring the programs to another department would involve large administrative costs. In addition, the staff of such a department would need to acquire some years of experience in order to administer the programs effectively.

Such a change would directly change the status, the constituency, and the scope of the USDA, and would likely reduce the importance of the USDA. Although the FNP was about half of the USDA's 1982 budget, even without FNP the USDA would still have a budget larger than the Department of State, Justice, Interior, Commerce, or the Department of Housing and Urban Development (Hoagland, 1983). In addition, a shift of the FNP administrative jurisdiction would change the jurisdiction of Congressional Committees. Since important political trade-offs are often made in these committees, such a change could indirectly influence other national policy decisions.

Some welfare groups have suggested shifting the FNP to the Department of Health and Human Services (DHHS) in order to integrate the FNP with other social programs. The DHHS currently administers the program of Meals for the Elderly. Proponents of such a shift hope that integration of all the programs might lead to more efficient administration. Another suggestion has been to transfer the Child Nutrition Programs to the Department of Education. This move would seem to defeat the objective of integrating all the programs.

The Recipient's Viewpoint

Up to this point we have discussed the FNP from the national policy perspective. Given the abundance of food in the U.S. and the existence of the FNP, it would seem that hunger is not a problem. However, from the perspective of the individual recipient there appear to be several problems: (1) failure to understand the rules for eligibility, (2) problems with bureaucratic red tape in becoming and remaining eligible for the programs, (3) the lack of initiative and/or nutritional knowledge necessary to use the stamps for a well-balanced diet, and (4) inadequate benefit levels.

Food stamp benefits are not intended to provide for all the food needs of the family. Rather, the family is expected to spend 30 percent of its net income (as calculated by the program) on food. Many claims of inadequate benefits may result from this misunderstanding. However, the assumption that the family is able to spend 30 percent of its net income for food may be unwarranted in many cases. For a needy family other necessary expenses, particularly housing, utilities, schooling, and medicine may require all the available money income so that the family is forced to rely upon food stamps for 100 percent of its food needs. Perhaps some of the current effort to provide emergency volunteer food assistance should be applied to improving the delivery of the FNP.

Summary

The objective of this paper is to point out the many complex issues surrounding Food and Nutrition Programs. As with any important public policy, there is no simple solution. Nor is there a single right answer for each issue. Rather, each choice has different consequences which affect all of us. Perhaps one way for each individual to frame this issue is to attempt to answer the following question: Suppose you were completely ignorant of what position you might hold in society, how would you formulate the rules which determine the distribution of costs and benefits in society? Would you include the FNP, and if so, what form should they take? The role of the government in providing food assistance will continue to be a significant issue in the food system policy debates of the future.

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National Food Policy

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The gist of the Shaffer-Stallmann paper is that many policy issues surround the domestic food assistance programs and that the reader should formulate his/her policy choices when given information which explains the various options. This comment does not attempt to detract from the value of an open exchange of views related to food program policy issues. But one should be aware that many policy choices have been firmly established by the electorate in this country, and that is fact, this nation currently has a national food policy.

This policy is not enunciated as such in any public document. Nevertheless, one can discover its outlines by examining policies on a number of issues related to the food programs and by noting the strength of the public sentiment in favor of the various programs. This public sentiment has been strong enough to protect the heart of these programs in the face of an administration committed to sharply curtailing them in its effort to reduce overall federal spending.

Let's look at some of the evidence.

1. On May 6, 1969, a Republican president in a report to the Congress said, "That hunger and malnutrition should persist in a land such as ours is embarrassing and intolerable." He declared that "the moment is at hand to put an end to hunger in America itself for all time." Before that year was over he established a separate agency, the Food and Nutrition Service within the U.S. Department of Agriculture, to expand and operate the food programs, and he called a National White House Conference on Food, Nutrition, and Health to examine all aspects of food and nutrition policy and to formulate policy recommendations.

2. An outgrowth of these policies, in January 1971, was a revamped Food Stamp Program, designed to provide national standards of eligibility based solely on income and household size rather than on the categorical eligibility of certian classes of people. All recipients received the same level of stamp issuance designed to meet nutritional adequacy, toward which recipients contributed in relation to their income.

By 1975 all local areas of the country were operating the program, including Puerto Rico, the Virgin Islands, and Guam. These standards have subsequently been tinkered with, and the level of stamp issuance has been reduced by the amount of the purchase requirement, but the fundamental principles of the program are supported by both political parties. President Reagan's attempt to trim the program resulted only in slowing its growth. It cost $10.9 billion in FY 1982 compared with $11.1 billion in FY 1981.

3. The technical design of the Food Stamp Program is the envy of the welfare-reform advocates who see no special merit for food assistance. They would like to take the program and "cash-it-out" by eliminating the restriction on food purchases as was done on a pilot basis in Puerto Rico. Eliminating the purchase requirement was the first step in that direction but there appears to be no sentiment for going any further. The Congress has directed that the cash-out in Puerto Rico be ended. Food assistance has much stronger political support than does general welfare assistance. The current concern about the "hunger" issue (caused in part by eliminating the purchase requirement which reduced the explicit obligation of recipients to use some of their own money for food) buttresses this point.

4. Recent attempts to eliminate federal support for the paying child in the National School Lunch Program did not touch the full support for those receiving free lunches (those below 130 percent of the poverty level). What had been a nutrition program has been moved closer to being a poverty food program.

5. Everyone loves the WIC program. Never mind that most of the recipients are eligible to receive (and about one-half of them do receive) more food assistance under the Food Stamp Program than under the WIC program. It receives strong support from the medical community which operates the program whereas food stamps are administered by the welfare office. WIC vouchers are used like green stamps to entice welfare people into medical clinics.

6. The elderly have their own Elderly Food Program and Meals on Wheels. In addition, they have been given special treatment at every opportunity in the design of the Food Stamp Program. No one cuts programs for the elderly.

In sum we have a national food policy, not by design but by default. Great fury and sound accompany any attempts to cut back or reform the programs. But all sides now know that the changes will only be cosmetic and that the food assistance programs, in forms close to their present design, will likely continue for a long time. Due to the escalators on benefits and eligibilty built into these programs their costs will rise over time. The programs cost over $16 billion in FY 1981. In FY 1982 costs were trimmed by $0.6 billion but in FY 1983 costs will approach $18 billion.

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SUMMARY

Financial conditions of many farmers and farm lenders have deteriorated significantly over the past 4 years. Large supplies and weak demand have squeezed farm income and reduced the net worth of farmers. Many farmers face insufficient cash flow, declining asset values, problems of access to credit, and forced liquidation, foreclosure, and bankruptcy. This financial stress is transmitted to farm lenders through loan delinquencies and losses, inadequate security for loans, and in some cases, insolvency and failure of lending institutions.

Problems of farmers and lenders stem from a combination of lower current incomes in farming, prospects for slow income growth, and a drop in the value of farmers' assets as land prices adjust to these market expectations.

Sources of the Problem

The current distress among farmers and farm lenders is rooted in the inflationary decade of the 1970's and adjustments from the excesses of that period to sharply different economic conditions in the 1980's. Throughout the 1970's, farmers faced rapidly expanding exports, accelerating inflation, and low to negative real interest rates (the nominal interest rate minus the inflation rate). Farmers responded by borrowing heavily to invest in new capital equipment, to adopt new production technologies, and to purchase increasingly expensive farmland. Farm debt rose an average of more than 10 percent a year. Yet land values rose even faster, providing the economic rationale as well as the security for farmers and lenders to expand and roll over debt. Debt/asset ratios of farms declined over the 1970's.

By the early 1980's, the factors that had given rise to the expansion had reversed direction. Worldwide recession weakened international markets; the value of the dollar rose rapidly against major currencies, further dampening export demand; and inflation was slowed by stringent control of monetary growth. Real interest rates, which had been low or negative throughout the 1970's, jumped to unprecedented levels of 8 to 10 percent. Farm commodities in foreign and domestic markets were too plentiful to sustain the prices that had prevailed during the 1970's, causing commodity prices and farmers' incomes to drop significantly. Land values, which depend on both current farm income and prospects for future income growth, also began to decline. The debt levels that some farmers had assumed over the 1970's were no longer sustainable. Farmers whose solvency depended on continuously rising land values or who pursued an aggressive expansion strategy were pushed toward insolvency. Moreover, even those farmers who pursued more cautious financial strategies in the 1970's but who suffered from the 1980 or 1983 droughts or other natural disasters are now under financial stress.

How Serious is the Problem?

The extent to which farmers face financial problems can be gauged by changes in their asset values, debt commitments, and farm cash income positions. Asset values continue to decline in many areas. Farm financial situations as measured by debt/asset ratios--debt as a percentage of assets--continue to worsen, and farms with significant debts continue to have cash shortfalls that require them to refinance, stretch out their loans, or liquidate some of their assets.

Asset Values

Farmland prices peaked in 1981 after three decades of uninterrupted increases. By April 1984, farmland prices had dropped 8 percent nationwide, and by as much as 28 percent in parts of the Corn Belt and Upper Midwest. Land values continued to drop throughout the Midwest in 1984, and probably will decline further in 1985. Land values are now back to the levels of the mid-1970's in those areas. Many of the farmers who purchased land or started farming in the late 1970's now have debts exceeding the value of their assets.

Farm Financial Situations

Farmers' equity and lenders' security are reflected by the debt/asset ratio and net worth of farm businesses. Cash flow indicates the amount of shortrun net cash income from all sources that a farm can use to service debts after meeting family living needs; that is, it indicates repayment capacity of the farm business.

Available data on the severity of farm financial problems, summarized in summary table 1 and summary figure 1, suggest the following:

- At current interest rates and levels of net returns in farming, farms with debt/asset ratios of over 40 percent are likely experiencing cash shortfalls. Farms with debt/asset ratios of over 70 percent are almost certain to have serious cash shortfalls.
- Some 243,000 farms (11.1 percent of all farms) have debt/asset ratios from 40 to 70 percent. These farms are termed "highly leveraged," tend to have serious cash shortfalls, and owe one-third of all farm debt.
- As many as 143,000 farms have debt/asset ratios above 70 percent. These "very highly leveraged" farms make up only 6.6 percent of all farms, but they owe almost one-fourth of all farm debt.

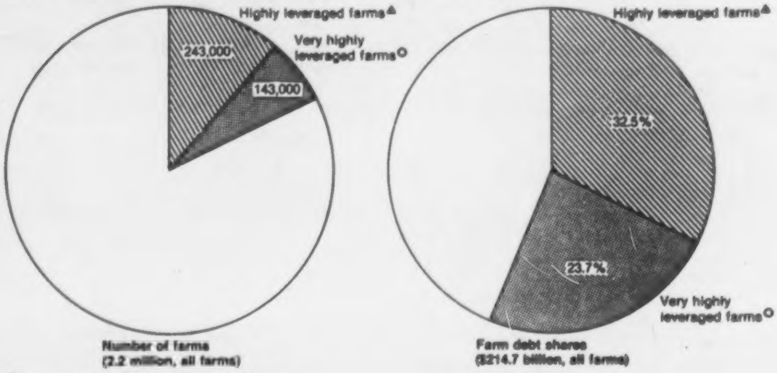
Not all of the farms in the highly and very highly leveraged categories are under serious financial stress. Farms with less than $50,000 in sales obtain much of their income from off-farm sources, and often qualify for and repay their loans on the basis of off-farm income. Very large farms with over $500,000 in sales

Summary table 1--Distribution of farms by debt/asset ratio and sales class, January 1984

Sales class	Highly leveraged (debt/asset ratios of 40 to 70 percent)			Very highly leveraged (debt/asset ratios over 70 percent)		
	Percent of class	Number of farms	Percent of debt	Percent of class	Number of farms	Percent of debt
$500,000 and over	17.4	5,200	4.8	15.3	4,500	4.9
$250,000-499,999	19.0	17,600	5.1	12.6	11,000	4.2
$100,000-249,999	18.1	52,800	10.5	9.2	26,400	5.9
$50,000-99,999	14.7	44,000	6.2	8.7	26,400	3.9
Less than $50,000	8.3	123,200	5.8	5.0	74,800	4.8
All farms	11.1	243,000	32.5	6.6	143,000	23.7

Summary Figure 1

Number and Indebtedness of Farms by Ratio of Debt to Assets, January 1984



▲Farms with debt equaling 40 to 70 percent of assets.
○Farms with debt equaling more than 70 percent of assets.

tend to be highly industrialized specialty operations (feedlots, sod farms, nurseries, orchards, and poultry operations) and typically operate with high debt/asset ratios. Most of these farms have positive cash flows.

The remaining farms, with sales of $50,000 to $500,000 annually, are the mainstream of family-size commercial agriculture, and the focus of the current concern about farm financial conditions. In 1984, of these 679,000 family-size commercial farms:

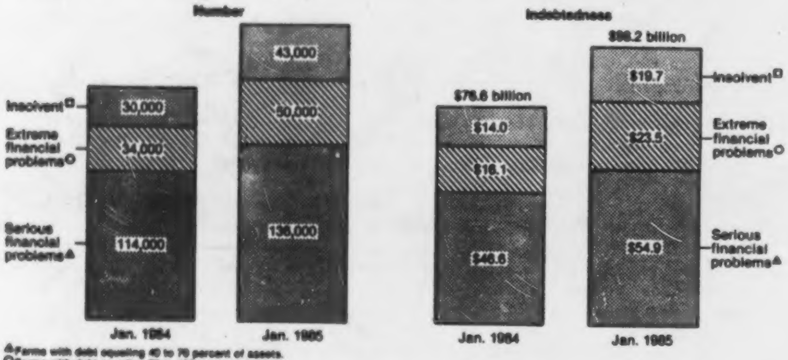
- Over one-quarter faced some degree of financial stress--from needing to stretch out loans to technical insolvency. These farms owed 36 percent of all farm debt.
- An estimated 30,000 farms were insolvent, having debt/asset ratios over 100 percent. These farms owed 6.5 percent of all farm debt.
- Another 34,000 farms, owing 7.5 percent of the debt, had debt/asset ratios between 70 and 100 percent. Those farms are rapidly moving toward insolvency.
- About 114,000 farms were highly leveraged, facing serious financial problems. These farms owed 22 percent of all farm debt.

If the situation in early 1984 is extended to early 1985, the available data suggest that one-third of all family-size commercial farms, owing almost one-half of all farm debt, will have some degree of financial difficulty (summary table 2 and summary fig. 2).

- 43,000 of the farms, owing 10 percent of the debt, will owe more than their assets are worth. They will be technically insolvent.

Summary Figure 2

Number and Indebtedness of Family-Commercial Farms Under Financial Stress, January, 1984 and 1985



△ Farms with debt equaling 40 to 70 percent of assets.
○ Farms with debt equaling 70 to 100 percent of assets.
◻ Farms with debt greater than assets.

Summary table 2--Current financial stress among family-size commercial farms: Number and proportion of farms and proportion of debt by debt/asset ratio 1/

Status of loans	Debt/ asset ratios	January 1985		Net annual increase, 1984 2/	
		Family-size farms	Proportion of all debt	Family-size farms	Proportion of all debt
Technically insolvent	Over 100 pct.	43,000 (6.3 pct.)	9.3 pct.	+13,000 (+1.9 pct.)	+2.8 pct.
Extreme financial problems	70-100 pct.	50,000 (7.4 pct.)	11.1 pct.	+16,000 (+2.4 pct.)	+3.6 pct.
Serious financial problems	40-70 pct.	136,000 (20.0 pct.)	25.9 pct.	+22,000 (+3.2 pct.)	+4.2 pct.
No apparent financial problems	under 40 pct.	450,000 (66.3 pct.)	17.9 pct.	-51,000 (-7.5 pct.)	-10.6 pct.
All family-size farms		679,000 (100 pct.)	64.2 pct.		

1/ Farms with $50,000 to $500,000 in sales.

2/ Assuming continuation of the economic conditions in 1983, and a further 5-percent national average decline in farmland prices in 1984.

- An additional 50,000 farms, owing 11 percent of the debt, will be moving rapidly toward insolvency.

- As many as 136,000 farms, owing 26 percent of the debt, will have serious financial problems, but will be able to survive a few more unfavorable years.

Farm Lender Situations

The major institutional farm lenders include commercial banks, the Farm Credit System, life insurance companies, and the Farmers Home Administration. The deterioration of farm financial conditions has also seriously affected these lenders.

Commercial banks, holding nearly 20 percent of all farm debt, have experienced sharp increases in delinquencies and loan losses over the past few years. Delinquent loans are up by nearly 20 percent at agricultural banks and are now significantly higher than at nonagricultural banks. Nonaccrual loans, which are more than 90 days overdue and not accruing interest, have nearly doubled to 1.6 percent since December 1982. Agricultural problem banks as defined by the Federal Deposit Insurance Corporation have nearly tripled--to 288--over the past 18 months. Agricultural bank failures increased from 6 in 1983 to 23 in 1984.

The Farm Credit System, which holds over 30 percent of all farm debt, is having severe problems. Ten Production Credit Associations were liquidated in 1984, most of them in the district of the Spokane Federal Intermediate Credit Bank. Other banks in the system are moving to save the Spokane Bank. Loan losses and charge-offs continue high in Production Credit Associations and are now starting to climb in Federal Land Banks.

Life insurance companies, holding 6 percent of all farm debt, indicate that their agricultural loans have recently had much higher rates of delinquency and foreclosure than their nonagricultural loans. Nearly 3 percent of life insurance company farm loans were in foreclosure proceedings in June 1984.

The Farmers Home Administration (FmHA), as the lender of last resort, would be expected to have a loan portfolio with a high rate of delinquency. FmHA holds about 12 percent of all farm debt. Delinquent FmHA debt has increased fivefold over the past 4 years, and now stands at $5.4 billion (21 percent of the outstanding principal). Much of this delinquent FmHA debt is concentrated in the South, with three States--Georgia, Texas, and Mississippi--accounting for nearly one-third of delinquent FmHA debt. FmHA has exercised forbearance to the maximum extent possible. Most FmHA borrowers who discontinue farming do so through choice or unforced procedures. For those who have discontinued through forced procedures, creditors other than FmHA have usually initiated the process.

This analysis was coordinated by David H. Harrington and Jerome M. Stam of the National Economics Division, U.S. Department of Agriculture.

Policy options for agriculture

Michael D. Boehlje

Many farmers currently face severe financial stress resulting in asset liquidations, problems in obtaining credit, and even bankruptcy.[1] An important issue in policy analysis is the applicability of traditional farm policy approaches to the current situation. This is a particularly relevant issue because the 1983 Payment in Kind (PIK) program was one of the largest and most expensive government transfer programs for agriculture in recent history, and yet many farms are still facing severe financial problems. Financial management strategies and enhanced farm and off-farm income can relieve the stress for some farms, but those with high leverage ratios (for example, 70 percent or greater) will likely not be able to obtain sufficient relief from various financial and farm management strategies to stave off asset liquidation or default. Adjustment to a new financial and economic environment may require government assistance.

Much of the past public assistance to farmers in financial stress has been in the form of price and income supports. Such a policy response may not only be an extremely high-cost alternative, but if improperly implemented, might result in disincentives to adjust resource use in agriculture to the slower growth in demand for its products. Most analysts believe that agriculture must adjust to its excess production capacity and lower values for some agricultural resources, particularly land.[2] If this is the case, then a public policy that impedes that adjustment will not only be very costly, but may result in long-term dependence on government assistance, as well as continued government interference.

While higher incomes would contribute to a healthier agricultural sector, the current financial stress problem in agriculture is too complex to be relieved solely by improved income. In fact, most agricultural support will go to large farms, whereas farms of all sizes are exhibiting stress. Other means for enhancing the income of agriculture, through subsidizing and promoting exports, devaluing the dollar, expanding domestic consumption including bio-mass production and fuel use, and converting grainland to grassland also only focus on one dimension of today's financial crisis in agriculture. A broader perspective and a broader set of policies is required to solve today's "farm problem."

Given the financial stress faced by the agricultural sector, the appropriate policy response is a relevant question. In order to evaluate alternative policy options, selected policy options can be quantitatively analyzed using microeconomic simulation models (see Box). The results from this process lead to the conclusion that measures other than the traditional farm income and price support programs may provide a greater chance of survival for financially troubled firms.

Policy options

Bankruptcy. Public policy currently encompasses a set of rules to resolve severe financial stress problems—the bankruptcy rules. Although bankruptcy may involve immediate liquidation of the assets and a discharge of farm debt,[3] it can also involve restructuring and rehabilitating the business under Chapters 11 or 13 of the bankruptcy law. Farmers cannot be forced into an involuntary bankruptcy. A farmer who chooses Chapter 11 (or possibly Chapter 13) bankruptcy proceedings becomes a "debtor in possession." Generally the farmer continues to manage and operate the farm, possibly under the surveillance of a creditors' committee.[4] A trustee to manage the property is appointed only in rare cases, so the farmer can continue to operate the farm as long as he follows an acceptable debt reduction plan.

The bankruptcy rules specify how the private sector will share financial losses in case of a default by a creditor, but two fundamental issues remain. First, should the private sector—the creditor, the debtor, and others who

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have done or are doing business with the debtor absorb the full loss, or should the public sector share part of this loss through some type of government transfer payment program? And second, and probably more important, who in the private sector under the current provisions should typically be required to absorb the majority of the loss? Because of the extensive use of merchant and dealer credit, the bankruptcy rules likely transfer the major losses from the production sector and the lending institutions to the input supply firms, which are only involved peripherally in financial management decisions. A fundamental question can be raised as to the equitability of this sharing of the financial losses due to debtor default.

Debt moratorium is a second, rather blunt policy instrument that might be used to respond to the current financial stress in agriculture. This alternative would deny the use of foreclosure procedures against farmers who cannot make their principal and interest payments, cancel or defer interest and principal payments for a specified time, write down a portion or all of the debt, deny deficiency judgments for those who cannot make their payments, or combinations of the above. Most debt moratorium proposals include a limited period in which debt obligations need not be met, but they do not eliminate the commitment to repay debt. Consequently, a key to the success of such proposals is that the financial condition of the firm and the industry will improve sufficiently in the intervening period so that the obligations can be repaid. Debt moratoriums were used with limited success in the 1930s to relieve the financial pressure faced by farmers.

The major direct cost of a debt moratorium is the income foregone by the lenders during the moratorium period. But in addition to this cost, there is serious concern about the implications of such programs on the long-run performance of the financial markets. Lenders who feel their earnings flow may be interrupted by future moratoriums will likely judge that there is more financial risk in credit extension and would expect to be compensated for that risk through higher rates of interest. Furthermore, some borrowers would no longer be able to obtain credit even if they have adequate collateral because a debt moratorium has negated the value of collateral in the credit extension decision.

Loan guarantees. Another possible public policy response is the provision of loan guarantees from a federal or state agency to indemnify the lending institution from default on the part of a borrower. Such a program is currently available from the Farmers Home Administration and additional funding could be made available for this program. To be an effective solution, a loan guarantee program must be combined with other alternatives such as systematic asset or liability restructuring to reduce the debt obligation or increase the cash flow of the business. Properly structured, a loan guarantee program may provide the time necessary to implement more permanent solutions and to protect the resource markets from collapsing in the process. Without a long-term solution, a loan guarantee program might be perceived as simply a "lender bailout." A variation of the loan guarantee program would offer the lender a federal or state bond in exchange for the loan; such a program transfers the responsibility for collection, as well as the debt obligation, to the government, and quite likely would result in higher cost than the traditional Farmers Home Administration, Small Business Administration, or other government guarantee.

Debt restructuring. A proposal that has received wide-spread attention recently is that of federally assisted debt restructuring. In fact, most of the current legislative proposals are variations of the debt restructuring theme. The premise of this approach is that providing additional time to repay the principal would reduce annual obligations, thus enabling some farmers to cover their lower principal and interest payments. For those who still cannot meet their debt obligations, restructuring would provide additional time to rearrange the financial structure of their businesses, including possibly the sale of assets. Most restructuring proposals involve the potential of a write-down of the debt as a condition to obtaining a federal or state guarantee.[5] For many producers who are facing financial stress, such a program may not be a permanent solution, but the first step in a long-run plan to adjust the asset and liability structure of the business so that the firm can survive.

Simulating some options

The consequences of interest rate buy-downs and lengthening repayment terms along with asset restructuring on individual firms can be illustrated using a representative cash grain farm and a representative hog farm. The cash grain farm comprises 435 acres of row crop land and has total assets valued at $925,000; the hog farm is a farrow-to-finish operation consisting of 425 acres of land and total assets valued at $965,000. Different financial structures for both farms are reflected through debt-to-asset ratios of 33, 50, and 67 percent. Additional assumptions used in the analyses are summarized in Table 1. The financial consequences of various policy options were simulated over a 10-year period using the Iowa State University financial planning model, which was econometrically estimated using farm record data from the Iowa Farm Business Association for the years 1964-1982.

The primary indicators of financial stress employed in these analyses are the debt-service-coverage ratio (DSCR) and its three-year moving average (ADSCR). The DSCR is defined as the firm's income net of family living expenditures, income taxes, and production expenses other than interest and rental payments on leased land divided by the firm's annual debt service obligation including interest on all loans and principal payments on intermediate and long-term loans plus land rent. A DSCR of less than 1.0 in any year indicates that the firm has insufficient net income after taxes and family living expenses to meet its annual debt service obligation. An ADSCR of less than 1.0 indicates that the firm's payments problem is more persistent and less likely to be the result of a single "bad" year.

The results of the analyses are summarized in Tables 2 and 3. These results indicate that the risk of illiquidity is generally greater for the representative cash grain farm than for the hog farm for all initial leverage positions or financial policies considered. For the more highly leveraged cash grain farm (50 or 67 percent debt) and the highly leveraged hog farm (67 percent debt), the probability of failure as measured by the ADSCR is very high—exceeding 90 percent in the base run. The interest rate buy-down policy is marginally effective in reducing the probability of failure for the 67 percent leveraged hog farm, but a large reduction in the probability of failure for this highly leveraged hog farm and the 67 and 50 percent leveraged cash grain farms is attained only with the asset restructuring plan.

Table 1
Parameter values for the representative farm analyses

	Asset value increase			Loan Terms		
Model	Current assets	Intermediate assets	Fixed assets	Current	Intermediate	Long-term
	(-------------	*percent*	-------------)			
Base	0	0	1.9	1 yr. @ 14%	1 yr. @ 14%	25 yr. @ 12%
Interest rate buy-down	0	0	1.9	Interest rate on current and intermediate debt reduced to 10% in initial year of planning horizon, 14% thereafter; rate on long-term debt 9% for first 4 years, 12% thereafter		
Reduced repayment rate	0	0	1.9	*Principal* payments on long-term (real estate) debt reduced by 25% for first 4 years; payments in later years correspondingly higher		
Asset restructuring	0	0	1.9	1 yr. @ 14%	1 yr. @ 14%	Leased

Table 2
Results of representative cash grain farm analyses

Model	Probability of debt service coverage ratio less than 1.0: In any annual observation[1]	Probability of debt service coverage ratio less than 1.0: In any model period[2]	Probability of 3-yr. average debt service coverage ratio less than 1.0: In any annual observation[3]	Probability of 3-yr. average debt service coverage ratio less than 1.0: In any model period[4]	Terminal equity: Average	Terminal equity: Range
	(------------------	percent	------------------	)	(------------ dollars	------------)
33 percent debt						
Base	29	82	17	54	799,88[illegible]	694,205 - 870,590
Interest rate buy-down	20	74	8	28	829,710	737,406 - 899,907
Reduced repayment rate	25	80	15	48	799,884	695,353 - 870,089
Asset restructuring	1	14	0	0	899,926	795,843 - 1,003,493
50 percent debt						
Base	92	100	98	100	492,140	303,645 - 601,114
Interest rate buy-down	73	100	86	100	555,656	399,273 - 644,419
Reduced repayment rate	89	100	98	100	494,277	306,523 - 602,366
Asset restructuring	8	26	0	0	668,697	565,691 - 770,827
67 percent debt						
Base	100	100	100	100	86,230	(174,998) - 245,512
Interest rate buy-down	100	100	100	100	221,428	22,062 - 347,560
Reduced repayment rate	100	100	100	100	90,083	(171,144) - 249,365
Asset restructuring	37	68	10	34	423,182	320,195 - 515,061

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[1] The proportion of 500 observations (10 x 50 runs) of the DSCR with a value of less than 1.0.

[2] The proportion of 50 model runs in which the value of the DSCR fell below 1.0 at least once in the 10-year model period

[3] The proportion of 400 observations (8 years x 50 runs) of the ADSCR with a value of less than 1.0.

[4] The proportion of 50 model runs in which the value of the ADSCR fell below 1.0 at least once in the 10-year model period.

Table 3
Results of representative hog farm analyses

Model	Probability of debt service coverage ratio less than 1.0: In any annual observation[1]	Probability of debt service coverage ratio less than 1.0: In any model period[2]	Probability of 3-yr. average debt service coverage ratio less than 1.0: In any annual observation[3]	Probability of 3-yr. average debt service coverage ratio less than 1.0: In any model period[4]	Terminal equity: Average	Terminal equity: Range
	(------------------	percent	------------------	)	(------------ dollars	------------)
33 percent debt						
Base	6	20	0	0	1,11,006	867,765 - 1,370,145
Interest rate buy-down	4	14	0	0	1,146,494	907,841 - 1,405,283
Reduced payment rate	5	22	0	0	1,112,778	868,737 - 1,373,140
Asset restructuring	1	1	0	0	1,360,227	975,307 - 1,788,137
50 percent debt						
Base	20	68	10	36	777,407	524,976 - 1,000,256
Interest rate buy-down	15	56	5	18	837,039	595,862 - 1,069,931
Reduced payment rate	19	66	8	28	779,718	526,846 - 1,004,210
Asset restructuring	3	20	0	0	1,119,841	756,990 - 1,607,309
67 percent debt						
Base	49	96	56	92	440,886	127,390 - 653,342
Interest rate buy-down	39	88	36	80	524,589	252,516 - 732,026
Reduced payment rate	48	94	52	90	443,196	130,835 - 656,769
Asset restructuring	6	12	0	0	849,383	485,483 - 1,430,565

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[1] The proportion of 500 observations (10 x 50 runs) of the DSCR with a value of less than 1.0.

[2] The proportion of 50 model runs in which the value of the DSCR fell below 1.0 at least once in the 10-year model period.

[3] The proportion of 400 observations (8 years x 50 runs) of the ADSCR with a value of less than 1.0.

[4] The proponion of 50 model runs in which the value of the ADSCR fell below 1.0 at least once in the 10-year model period.

For the representative farms of lower leverage, the 33 percent debt cash grain farm and the 50 percent debt hog farm, the probability of failure in the base run is much lower than for comparable firms of higher leverage. For these firms, the interest rate buy-down policy reduces the probability of failure by one-half relative to the base run, the asset restructuring policy completely eliminates the probability of failure, and the reduced repayment rate policy is of intermediate effectiveness in reducing the probability of failure. Finally, the 33 percent debt hog farm is well insulated from the financial stress affecting the firms of higher leverage categories; this lower leverage hog farm is free of the risk of failure as defined by the ADSCR in the base scenario and in all policy scenarios.

The impact of the policy scenarios on average terminal net worth is consistent for both representative farm types across all initial debt levels. The reduced repayment rate policy results in essentially no change in average terminal net worth relative to the base scenario, the interest rate buy-down policy causes a moderate increase in terminal net worth, and the asset restructuring policy results in the greatest gain in equity over the 10-year period.

Interest rate subsidies. As a consequence of the severe problems faced by agriculture because of high interest rates, various proposed policy responses include interest rate buy-downs or subsidies that focus on reducing this component of the cost structure for farmers. However, a preferred alternative to interest rate buy-downs for agriculture would be a fiscal policy that reduces the size of the government deficit and the demands of the federal government on the capital markets. Such policy would result in lower market rates on interest throughout the U.S. economy and would, through a reduction in the foreign exchange value of the dollar, increase export demand for agricultural commodities.

Asset leasebacks. As suggested earlier, much of the current asset restructuring involves liquidation of real estate and other capital items for cash, but there is only so much liquidity in rural communities, and cash liquidations frequently result in substantial liquidation losses. Other means of liquidation must be investigated and could be facilitated by public policy.

For example, lending institutions might be encouraged to take the title of real property in lieu of debt obligations, and then lease this property to the original debtor. This arrangement would keep the property off the market and thus reduce the chance of resource markets being depressed further. In addition, by leasing the property to the original operator, the lender can convert a nonperforming asset into one that generates at least some rate of return in the form of rental payments. To reduce the possibility that the lender must tie up its liquidity in such assets, a government program could be implemented to provide funds to the lender in the amount of the assets taken back in lieu of debt.

One of the purposes of a leaseback program is to stabilize resource values. A critical issue today is whether the public sector should play a role in asset liquidations in the form of regulating, monitoring or facilitating the process. Legitimate concerns have been expressed about the attitudes of some lenders who are encouraging cash sales of assets without recognition of the implications for the producer or the asset markets. Collateral values are declining, in part because of forced sales of assets for cash into a market where there is limited buying power. We need to be much more innovative in the liquidation process, and we need to evaluate whether public policy can assist in this area.

Recapitalization is another alternative that might involve public policy. In many cases, the financial structure of the business could be significantly improved through an infusion of equity from outside the firm, either by a debt holder exchanging his obligation for an equity position in the firm, or an outside investor providing additional funds to reduce indebtedness. An equity infusion may at first glance appear unlikely. In some cases, however, family members may be willing to provide such an infusion or an investor might be willing to contribute capital funds for a larger-than-proportionate share of the ownership of the firm or to take advantage of the tax shelter available from operating losses. A third source of an equity infusion is the lender. If the firm has current cash flow problems because of high leverage and aggressive growth, but also has strong management and the potential for reasonable future earnings, the lender may minimize losses or increase the chances for recovery by converting debt obligations into equity.

The role of public policy in this area of outside equity infusions or recapitalization may be one of reassessing current legislation that discourages these arrangements. Many states have passed laws that restrict or prohibit outside equity investments in agriculture. Alternatively, a government-financed venture capital entity might be formed to make the necessary equity capital infusion into agriculture under terms that are more acceptable to both farmer and investor. Such an arrangement could be financed with state revenue bonds or federal funding. An institution similar to the Agricultural Development Banks used in many Third World countries, involving a combination of public and private sector funding, might be a viable institutional innovation in the U.S. capital markets at the present time.

Information to facilitate the adjustment process, including programs to facilitate the merger of business firms, to retrain and relocate people, and to disseminate the best information on adjustment strategies and resource availability could be provided through public policy. However, it appears that such programs would be an inadequate response to the current financial stress problem in agriculture.

Conclusions

A significant number of farmers are suffering financial stress. Given the complex nature of the problem, a public policy approach that focuses only on one characteristic of that problem will probably be ineffective. Specifically, price and income support programs, which have been the major component of agricultural policy in the past, may be quite ineffective in solving the current problem and may, in fact, compound and contribute to long run financial problems in agriculture.

Alternative policy options appear better targeted to the problem. While spiraling farm debt suggests that debt restructuring is the answer to the current financial stress, a restructuring of agricultural assets remains the key to a long-term solution. Results of both firm level and aggregate analyses indicate that asset restructuring through sale-leasebacks is preferable to interest rate buy-downs or liability restructuring in reducing financial stress for individual farm firms and the industry. Rearranging liabilities is not a permanent solution to the current financial stress, because even with more time to repay, many farmers will not be able to service their debt with current or expected interest rates, productivity, and input and commodity prices. However, debt restructuring is an important mechanism for buying time to implement more permanent solutions. Asset restructuring, including liquidation, debt reductions, and equity infusions, will be required to improve the long-term survivability of many farm businesses. The aggregate analyses indicate that a general reduction in interest rates and more rapid growth in exports would significantly reduce the financial stress that the U.S. agricultural sector is now facing.

One of the key objectives of any public policy to alleviate financial stress should be to protect the resource markets from collapsing. Stabilizing resource values is critical to maintaining the stability of the agricultural production sector and rural communities. But using government intervention to stabilize resource values at levels that are not supportable in the long run by market prices can result in very high government expenditures, inefficient resource allocation, and higher consumer prices for food products.

The agricultural sector has suffered significant wealth losses. An important public policy concern is how those losses will be shared among the various members of the private sector, and between the public sector and the private sector. A related concern is how to minimize the losses. What may be needed is a public sector contingency plan that can provide a safety net in case the farm economy continues to be stagnant or the resource markets begin to collapse. A strategy of doing nothing today could, if the financial condition of agriculture continues to deteriorate, very easily result in irresistible political and economic pressures later to implement drastic options, such as a general and extended debt moratorium or significant increases in commodity support prices. But inappropriate action now may interfere with the long-run adjustments in resource values and utilization that must occur in order that the United States retain an efficient and financially sound agricultural sector.

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[1] The first article in this publication, "The Financial Stress In Agriculture," by Gary Benjamin, provides a discussion of the causes, extent and nature of the current financial stress in the farm sector.

[2] "Financial Stress in Agriculture," Summary of presentations at a workshop on October 22, 1984, at the Kansas City Federal Reserve Bank.

[3] Bankruptcy Act, Chapter 7, Public Law No. 95-593. 92 State. 2549, 1978.

[4] J. W. Looney, "The Bankruptcy Reform Act of 1978 and the Farmer: A Survey of Applicable Provisions," *South Dakota Law Review*, vol. 35, 1980, pp. 509-27.

[5] Harl, Neil E., "Restructuring Debt In Agriculture," Department of Economics, Iowa State University, Ames, Iowa. May, 1984.

COOPERATIVE EXTENSION AND AGRICULTURAL PROFITABILITY -- INTENSIVE ASSISTANCE FOR FINANCIALLY DISTRESSED FARM FAMILIES

INTRODUCTION

As America's farmers reap the bountiful harvest of 1985, many of them must now come to grips with the grim reality of the continuing financial crisis in agriculture. A large number of the Nation's 2.3 million farms now suffer some financial difficulties with many of them facing serious survival problems.

Stagnant crop prices, falling land values, and a disappearing export market are further compounded by stress-related family problems, including suicide and divorce. The foundations of rural America -- its farmers, families, communities and related businesses -- are all now impacted in some way by the farm crisis.

Across the country, the Cooperative Extension system with its network of state and county field staff is redirecting people and resources to respond to this crisis. Programs and resources focus on farmers, their families, rural communities, agribusinesses, and related social services and lending institutions.

The short-term target is to provide intensive assistance to almost one-third of the Nation's farm families in critical financial distress. The long-term objective of this integrated, multidisciplinary Extension approach is to improve profitability in agriculture.

NATIONWIDE SURVEY

An August 1985 nationwide survey of states indicates that the Cooperative Extension system continues to accelerate its efforts in responding to the immediate problems of those U.S. farm families who are facing severe financial problems. The survey covers 2 years from October 1983 to the present and provides estimates of need for intensive assistance in the coming year. Based on the estimates of Extension professional staff across the country, survey results reveal that:

95,600 farm families received intensive assistance* in the last 2 years in developing a revised farm business and financial plan. Of these families--

- 48 percent (almost half) plan to continue farming full-time
- 8 percent plan to make the transition out of farming
- 24 percent plan to farm part-time with supplemental income from off-farm sources.

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* Intensive assistance as defined by the survey questionnaire is "when a farm family has been assisted in preparing or revising individual financial statements, cash flow projections, and/or a farm business plan of action that is expected to improve their financial affairs."

Prepared by the U.S. Dept. of Agriculture, Extension Service. Washington, G.P.O., 1985.

260,000	farm families (more than twice as many as have already received Extension assistance) need intensive assistance in the next 12 months.
63,525	farm families (about two-thirds) of those previously assisted need additional assistance in the next 12 months.
12	states provided hotlines with an estimated 18,000 calls received to date.
14	states provided counseling centers with an estimated 6,000 people assisted to date.
36,325	farm families were provided intensive assistance with major stress problems. However, it is estimated that Extension educational programs provided information to a total of 167,000 farm families on family problems such as health, marital instability, and stress problems which are related to financial crises.
15,600	agricultural professionals -- lenders, consultants, vo-ag teachers--received indepth training in how to provide intensive assistance to farm families with financial problems. These professionals used this training to provide intensive assistance to
- 80,000	farm families in the last 2 years. An estimated 96,000 more farm families will receive this type of assistance in the next 12 months from an additional 17,000 professionals who will be trained by Extension.
8,000	rural non-farm businesses and community organizations received intensive assistance in financial planning from Extension. The number needing this assistance in the next 12 months is estimated to be four times greater -- 32,000.

In approximately two-thirds (2,002) of the Nation's counties, Extension has provided intensive financial management assistance. Limited numbers of temporary personnel (about 300) and volunteers (about 130) are being used, but this number will increase substantially in the coming year.

Program delivery systems for each farm family include one or more of the following: one-on-one assistance, including farm visits; workshops; publications; preparing cash-flow projections; farm record analysis; and computer-assisted farm financial planning. The Minnesota-developed computer analysis program, FINPACK, is being adapted and used by 50 percent of the states. Program delivery systems for agricultural professionals and non-farm businesses and organizations include small group meetings, workshops, multimedia efforts, and related materials.

Delivery Methods/Procedures Used To Assist Financially Distressed Farm Families, By State (1983-1985)

State	Delivery Methods/Procedures						
	One-on-One Consultation	Small Groups/ Workshops	Computer Analysis	Publications and Media*	Hot Line	Counseling Center	Other**
Alabama	XX	XX		XX			
Alaska		XX	XX				XX
Arizona	XX	XX					
Arkansas	XX	XX	XX				XX
California		XX	XX	XX			
Colorado	XX	XX		XX	XX	XX	
Connecticut	XX	XX	XX	XX			XX
Delaware	XX		XX				
Florida	XX	XX	XX	XX		XX	XX
Georgia	XX	XX		XX			
Hawaii	XX	XX					
Idaho		XX			XX		
Illinois	XX	XX	XX		XX	XX	XX
Indiana	XX	XX		XX			XX
Iowa	XX	XX	XX	XX	XX		XX
Kansas	XX	XX	XX	XX	XX		XX
Kentucky	XX	XX	XX	XX		XX	
Louisiana		XX		XX			
Maine	XX	XX	XX	XX		XX	XX
Maryland		XX		XX			XX
Massachusetts	XX	XX					XX
Michigan	XX	XX	XX	XX	XX	XX	
Minnesota	XX	XX	XX		XX		XX
Mississippi	XX	XX				XX	XX
Missouri	XX	XX	XX	XX	XX	XX	XX
Montana	XX	XX					XX
Nebraska	XX	XX	XX	XX	XX	XX	
Nevada	XX	(p)***					

*Includes publications, radio, TV, video and press activities.

**Other delivery methods/procedures include home study courses, working through lenders and other organizations, referrals, and personal correspondence.

***Planned

Delivery Methods/Procedures Used To Assist Financially Distressed Farm Families, By State (1983-1985) (Continued)

State	One-on-One Consultation	Small Groups/ Workshops	Computer Analysis	Publications and Media*	Hot Line	Counseling Center	Other**
	Delivery Methods/Procedures						
New Hampshire	XX	XX					XX
New Jersey	XX	(p)					XX
New Mexico	XX	XX		XX			XX
New York		XX		XX			
North Carolina	XX	XX	XX				
North Dakota	XX	XX	XX	XX		XX	XX
Ohio	XX	XX	XX		XX	XX	XX
Oklahoma	XX	XX		XX	XX	XX	
Oregon	XX	XX					
Pennsylvania		XX	XX	XX			XX
Puerto Rico	XX	XX					XX
Rhode Island	XX	XX					
South Carolina	XX	XX	XX	XX			
South Dakota	XX	XX		XX			XX
Tennessee	XX	XX					XX
Texas	XX	XX		XX			XX
Utah		XX					
Vermont	XX	XX	XX	XX		XX	XX
Virgin Islands		XX		XX			XX
Virginia	XX	XX		XX		XX	XX
Washington		XX		XX			XX
West Virginia		XX					XX
Wisconsin	XX	XX	XX	XX			XX
Wyoming		XX			XX		XX

*Includes publications, radio, TV, video and press activities.

**Other delivery methods/procedures include home study courses, working through lenders and other organizations, referrals, and personal correspondence.

***Planned

PROGRAMMING FOR THE LONG RUN

The intensive efforts described are equipping farm families to deal with the current financial crisis. Longer running programs are needed to enable American farm families to restore profitability to their farming operations. Proposed Extension efforts in this area incorporate systems approaches that utilize production, management and financial programs to focus on increased profitability. Such approaches may utilize the emerging CORNPRO, WHEATPRO, AND BEEFPRO programs and the existing Integrated Reproduction Management (IRM) and Integrated Pest Management (IPM) programs. FINPACK and other financial analysis programs help farmers to identify the most profitable enterprise combinations for their specific farm operations. Marketing systems and other computerized support packages are another important dimension that must be considered. This systems approach will involve multidisciplinary teams with the goal of working with farm families on specific problems.

HIGHLIGHTS OF EXTENSION ASSISTANCE PROGRAMS

Due to a combination of factors -- including adverse weather, decreasing prices, fewer wheat and grain exports, and sharp decreases in land values -- farm families in the Midwest and Northern Plains are still the most severely impacted by the farm financial crisis. But survey data from other regions indicate that the problem is intensifying nationwide.

Most state Extension Services provided accounts of specific examples of intensive assistance to farm families. These range from helping farm families develop alternative financing arrangements...to helping with plans to move out of farming...to assisting with plans to improve current financial management. Space does not permit including all these accounts in this report, but some representative examples appear in the following section.

MINNESOTA

The average earnings of full-time Minnesota farmers dropped to a new 30-year low in 1984. Minnesota is losing a higher percentage of farms than the national average. In mid-1985, it was estimated that there were 5,000 fewer Minnesota farm operators than a year earlier--the largest drop in the Nation. However, there is little chance outside the Twin Cities area for off-farm employment.

About one-third of Minnesota farmers have significant cash flow problems. Approximately 25,000 farm families have or have had a strong need for assistance in revising their farm financial plans. Minnesota Extension reached approximately 15,000 farm families during June and July of 1985 alone through existing farm financial programs and a special program--Project Support.

Project Support is a program for farm families who need financial planning, stress management, and support. It is designed for farm families in three areas: families who have recently left farming or will shortly do so; farm families who need help in analyzing their short-term financial situation and might leave farming, and farm families who will continue to farm. The goal of Project Support is prevention--which means trying to reach farm families before they become distressed financially and emotionally.

Minnesota recently established a telephone hot line to assist financially distressed farm families. During the last 6 months Extension handled over 6,000 calls.

Minnesota's computerized financial management program, called FINPACK, assists farmers in crucial management decisions, including: long-range planning, monthly cash flow projections, crop and livestock alternatives, end-of-the-year analyses, and trend projections. FINPACK is now in use in 25 states nationwide. Minnesota Extension also trained county Farmers Home Administration staff to use the program.

Since December 1984, a new Farm Financial Management Center has provided educational programs for farmers and those who serve them. The new center brings people and resources together from across the country for training and development of practical tools for Extension's use in future farm financial management educational programs. Development work on the FINPACK program was a first project of the Center.

MICHIGAN

Michigan Extension has approached the farm financial crisis with an intensive system of counseling and assistance, including the development of video and audio tapes on Family Communication During Stress and Crisis. Extension Management Assistance Teams (EMATs) have provided comprehensive assistance to over 200 farm families since January 1985. Teams consisting of district farm management agents, agricultural agents, and home economists meet with distressed families identified by county staff. The EMATs work with the entire family to develop strategies for managing in times of crisis.

For example, an EMAT augmented by an Extension beef specialist and crop specialist visited a farm in crisis, spending a day reviewing the facilities and analyzing the family situation. The team developed a plan for the farm which identified strengths and recommended changes. This report recommended the transfer of debt for better terms, change in crops, computer cash flow analysis, and off-farm employment. Follow-up with the family showed they had implemented the recommendations including refinancing the loan, the wife returning to work, the husband obtaining part-time employment, and crop rotation. The family was positive about the EMAT and the solutions they had worked together to develop.

Other Michigan farm families have benefited from Farm Cash Flow Workshops and computer assisted financial management strategies developed by Michigan Extension. Overall, over 1,500 families in crisis have been assisted by Extension.

IOWA

With agriculture comprising 80 percent of the state's economy, the farm crisis situation in Iowa continues to worsen. Thirty percent of the farmers have a 70 percent or more debt-to-asset ratio. Many desire off-farm employment, for themselves or family members, but opportunities are limited and declining as agribusinesses suffer financially along with farmers.

Iowa Extension is directing approximately 45 percent of its programs and resources to cope with the continuing farm crisis. In addition, the State of Iowa provided $200,000 extra funding to Extension in FY 1985 for work with the financial crisis.

Iowa Extension's ASSIST program continues to help farmers, 8,000 of whom have been reached thus far, in analysis of options for servicing debt, cash flow, and work with lenders. Over 10,000 Iowa families have learned to deal with the stress generated by financial problems by using a home study course on stress management. Similarly, 4-H is training staff to recognize and deal with stress in young people.

The Rural Concern hot line was established by the governor and is managed by Extension. FmHA has contributed $75,000 toward funding this service, and other state and private sector sources are also providing funds and support. More than 40 calls per day are received over the hot line from stressed farm families. Home Economics Extension has informed and involved community leaders in helping farm families in crises. More than 1,200 copies of "Farm Families Facing Economic Hardship--The Emotional Needs of Those at Risk," have been distributed at community meetings.

Iowa has worked intensively with 3,500 agricultural lenders and professionals (lawyers, clergy, social workers, teachers) and 2,000 non-farm businesses and organizations to train people to work with financially distressed farmers. In turn, these groups have worked with approximately 25,000 of the state's farm families on financial and stress-related problems. Extension has assisted in development of community resource committees in two-thirds of Iowa's counties. Self-help and peer counseling groups exist in half the counties with linkages statewide. Iowa is developing new programs to address the ripple effects now impacting local communities because of lowered retail sales, non-payment of taxes, and out-migration. Local business management, economic and leadership development are emphasized.

ILLINOIS

The 1984 labor and management income for Illinois farm cooperators averaged a minus $6,973 which compares to $6,465 for 1983. The data, published in the 1984 Summary of Illinois Farm Business Records, comes from farm business records of 7,842 Illinois farms. This makes the fourth consecutive year that Illinois farmers have shown a negative return. It is expected that about one-half of Illinois farms will not generate enough income in 1985 to maintain their net worth.

Illinois Extension estimates that during the past 2 years, 30,000 farm families have had or continue to have severe financial problems and have a strong need for assistance in revising their individual farm business and financial affairs. Illinois Extension has provided extensive assistance to approximately 5,000 families. About 2,000 of these farm families will need further assistance in the next year, while about 10,000 families not previously assisted will require help in developing revised financial plans.

A special project--Rural Route--provides intensive educational assistance in financial planning and management to farm families. The Illinois project consists of two primary features: (1) a toll-free, hot-line telephone service, and (2) confidential farm financial counseling.

Approximately 700 farm people have used the hot-line service. Calls to the hot-line are referred to field counselors who provide one-on-one counseling. Approximately 200 field staff are trained in farm financial analysis. Two farm financial counseling centers coordinate counseling activities for two large sections of the state--Western and Southern Illinois. The centers have assisted approximately 1,200 persons.

NEBRASKA

Nebraska farmers carry the highest debt-to-asset ratio in the United States. Financial stress is the major problem of most farm families. Since October 1983, Nebraska estimates that 30 percent of these families have had or presently have severe financial problems and are in need of farm financial assistance. During this time Nebraska provided intensive assistance to more than 1,627 farm families in developing revised individual farm business and financial plans. Of these families, about 1,387 received assistance in developing a plan which most likely will enable them to continue farming full time. Nebraska estimates that 10,000 additional farm families will require assistance with their financial plans between now and September 1986.

Managing for Tomorrow -- This financial management program for farmers and ranchers integrates microcomputer analysis of the present business situation with economic projections for the future. The program combines 20 hours of group training with 12 hours of individual consultation. Farm couples pay a $200 user fee to participate. Approximately 600 couples enrolled in 34 workshops held late 1984 and early 1985. More participants are expected in late 1985 and throughout 1986.

Counseling Centers and Hotlines -- Nebraska Extension assisted approximately 450 families in Farm Financial Counseling Centers open from February to April 1985. Located at the five Nebraska Research and Extension Centers and at other strategic locations throughout the state, the centers focused on borrowers from commercial banks, production credit associations, and the Federal Land Bank who needed immediate assistance. Farmers could access the centers through their local county Extension office or by calling the toll-free Farm Financial Information Line.

NORTH DAKOTA

Approximately one-third of North Dakota's farmers are experiencing serious cash-flow problems. Since October 1983, Extension has provided intensive assistance to 4,500 of these farm families in developing farm business and financial plans. Extension assisted another 450 farm families who developed a plan which involved some family members working off-farm; another 450 farm families were aided in making a transition out of farming. About 4,500 farm families sought help with major stress problems, and 700 farm families visited 56 Counseling Centers in the last 10 months.

A "Tools for Profit and Survival" Kit is used extensively by North Dakota Extension in financial management workshops. The kit includes instructional materials, such as a balance sheet, income statement, cash flow budget and market plans to evaluate a farm's financial situation.

Another North Dakota farm management program -- the Farm Financial Anaylsis Service -- provides one-on-one assistance to farmers who need additional instruction in completing a thorough financial analysis of their farms -- 56 farm analysts now work across the state in this effort. Extension provides intensive assistance to volunteers from the community such as agricultural lenders, consultants, vocational agricultural teachers and other professionals to assist in reaching and teaching farm families. For example, 160 of these leaders were trained in 1985 and an estimated 50 more will be in 1986. North Dakota estimates that another 1,200 farm families will need intensive assistance from now through October 1986.

MISSOURI

Missouri leads the Nation in the number of farm bankruptcies. Since October 1983 almost 27,000 farm families across the state have experienced or are experiencing severe financial problems. During the last 2 years, Missouri has provided intensive assistance to approximately 2,700 families in developing revised individual farm business and financial plans. About 90 percent of those helped require further assistance. An additional 3,000 farm families will need assistance in developing plans during the next year.

Missouri provides farm families with financial management guidance and information through the following programs:

MOFARMS -- Missouri Financial Advisory Resource Management Support is a joint project of Extension and the Missouri Department of Agriculture. The Extension-trained farm financial consultants and home economists work with families to: identify strategies for coping with financial stress, review their current financial situation, develop an individualized financial plan, and explore alternatives to farming through vocational assessment referrals. The MOFARMS Referral Center received 633 calls for consultant assistance during the first 6 months of the program. Calls have come from 94 of Missouri's 114 counties.

Community Support Networks -- This program mobilizes resources of agencies, institutions, and volunteer groups, educating them about the farm financial situation and encouraging them to extend their services to needy local farm families.

Educational Programs -- Financial Management Seminars are targeted at agricultural lenders and the development of agriculture finance clubs for farmers. Extension staff also assist farm family members in identifying marketable skills, finding off-farm job opportunities, preparing resources, resume preparation, and related topics.

NORTH CAROLINA

Although North Carolina has not experienced the intensity of financial distress that many other states have, more farmers are now beginning to suffer serious financial difficulties. Extension is currently mobilizing its resources to better address these needs. In North Carolina, agriculture is the leading income producer behind tourism, bringing in $4 billion a year. With approximately 6 to 8 percent of the state's farmers expected to go under this year, rural communities are also jeopardized because of their strong dependency on agriculture and textiles, both now troubled industries.

Since October 1983, North Carolina estimates that some 2,250 farm families have received intensive assistance in developing revised farm business and financial plans. Extension also provided intensive training to an estimated 1,000 agricultural lenders, consultants and other professionals who in turn worked with 4,000 distressed farm families. Managing for Tomorrow, a farm crisis program focusing on financial decisionmaking, and farm family stress, family home expenses, and community resources, will reach families in 50 North Carolina counties in 1985 and '86.

Marketing '85, an important Extension education program, focuses on agricultural futures, hedging strategies, forward pricing, and agricultural options. Extension held 12 workshops with over 1,000 farmers, lenders, and others attending. Extension staff are also working with farmers to reduce costs of production, and have identified over $.5 billion in potential savings. North Carolina installed a new hot line staffed by former Extension workers for farmers to call on farm management issues with referrals to other agencies where appropriate. The first Extension counseling centers are planned for next year with employment of 25 temporary counselors. North Carolina estimates that 25 percent of its resources will be directed to the farm crisis in 1986.

VIRGINIA

Financial difficulty is a growing problem for farmers in all parts of Virginia. Extension farm management agents are responding to requests for individualized assistance from farmers, county Extension agents, ag lenders and suppliers. Volunteers, trained in financial evaluation and stress management, assist farm families in assembling the necessary information about their farm business in order to complete a thorough business and financial analysis.

Records technicians--part-time employees--promote and assist recordkeeping efforts of farm families as they develop strategies to deal with their current financial situations. Participants in this recordkeeping program meet in groups to learn about farm business and financial management. In addition to the group meetings, families are assisted individually by the records technicians, county agents, and farm management agents.

To strengthen the financial analysis efforts and skills of Extension personnel and those non-Extension people involved with farm families, Virginia provides training sessions in farm financial analysis. Information on psychological stress is also offered.

TENNESSEE

In the last 2 years, Tennessee Extension estimates that between 25,000 and 30,000 farms families have been severely effected by the farm crisis. During that period, Extension intensive assistance has helped an estimated 4,000 farm families revise their individual farm business and financial plans. Of that number, it is anticipated that nearly 2,050 will continue farming on a full-time basis, nearly 1,375 families will combine off-farm work to stay afloat, and about 435 will leave farming entirely.

Well over one-fourth of the farm families assisted were also counseled for major stress problems. Tennessee estimates that an additional 24,430 farm families in the state will need help in revising financial plans between now and October 1986. In the past 2 years, Extension trained over 430 Tennessee agricultural lenders, consultants, and other professionals who, it is estimated, have assisted some 5,000 families--and Extension plans to train another 200 non-Extension people in the next year.

Small farm families are hardest hit in the state. One dairy farm family in mid-state was under tremendous financial pressure. The father of the family had died about 6 years ago leaving a substantial debt load for the 130-cow dairy herd farm. His widow and son, now managing the operation, lacked about $40,000 per year to make their operation successful from a cash-flow basis. The local Extension agent worked with them in developing alternate plans. The herd size was reduced to 80 cows to match the land resource base, and other necessary changes made. The result was a $30,000 improvement in the cash-flow position with more adjustments planned.

TEXAS

Of the more than 7,450 Texas farm families in severe financial stress, over 5,700 have received intensive assistance from Extension. Of those helped, 1,865 will be able to continue full-time farming, and 3,785 will seek off-farm work to supplement income from farming and ranching. Only 100 plan to leave farming. Texas is devoting 30 percent of its resources to programs designed to help farm families deal with specific financial problems.

Extension staff estimate that more than 11,100 additional Texas farm families will need help in developing revised financial plans in the next year, while 3,785 of those already assisted by Extension will require further aid.

In cooperation with the Texas Department of Agriculture, Texas Extension (1890 and 1862) continues to hold workshops specifically for Hispanic farmers in southeastern and central Texas and Black farmers in central and northeastern Texas. Subject-matter of the workshops, at which all ethnic groups are welcome, includes: land retention, marketing farm products, farm loans, lending agencies, loan security program, and assistance available from agencies and organizations.

The major objective of the Texas Intensified Farm Planning Program of 1890 Cooperative Extension is to enable farm families to increase agricultural income through intensive educational assistance in agriculture production, management, and marketing. In 1 year, over 1,050 small farmers received intensive one-on-one assistance. In addition, over 2,000 distressed rural homemakers learned money and meals management. Microcomputer courses are scheduled for the next year for farmers, ranchers, and agribusinesses. Extension, with several cooperators, also conducted workshops aimed at introducing small farmers to new, innovative small-farm management techniques. Another project involves teaching the establishment of new farmers markets statewide through one-on-one contact and group sessions.

WYOMING

Approximately 10 percent of Wyoming's 5,650 farms and ranches are now insolvent and will be phased out of agriculture this year, a state survey estimates. With 80 percent of agricultural cash receipts from livestock and a troubled industry statewide, ranching areas have been the hardest hit.

Wyoming Extension educational efforts are influenced by distances in most of their 23 counties, and all county offices are involved in providing intensive assistance to farm and ranch families. Agents are working with people who saw Wyoming's farm and ranch incomes dropping faster than in any other state from 1973-1982, and who now face a 1984-85 "close out time" as farm and ranch foreclosures increase.

Even with the distance factor, Extension workshops in financial management, recordkeeping, cash flow, and other management skills are well attended. An ongoing series of 10 workshops in the fall and spring for young farm couples is one example. A regional workshop emphasis is planned for crisis assistance in 1986, as well as increased small workshops and one-on-one counseling. Extension developed a software package that bankers and other lenders are using to assist farm families in budget and financial analyses. Extension also held a "Holistic Ranch Management" workshop with emphasis on hands-on computer sessions and farm financial crisis subject-matter.

MONTANA

About a third of Montana's 23,570 farms and ranches carry debts exceeding 40 percent of their assets. In the past 2 years, Montana Extension staff have worked intensively with over 3,600 of the 5,400 farmers and ranchers considered to be in severe financial trouble. Of those helped, perhaps 89 percent will be able to continue farming full-time. Nearly 3 percent will leave farming, and 26 percent have or will get off-farm work to supplement farm income.

Extension efforts have involved: farm management workshops emphasizing financial management and forward planning; financial management workshops stressing financial management and debt restructuring, consulting one-on-one with individual families; and training of staff in other institutions, such as mental health centers, banks, and schools to enable them to counsel distressed farm families.

Extension's intensive training since October 1983 for agricultural lenders, consultants, vocational agricultural teachers, and others has enabled roughly 500 individuals to work with nearly 2,300 farm families. They will work with an estimated 1,800 more families within the next year. In one case, a county agent and a farm management specialist worked with a struggling young dairyman who faced nine major creditors, and enabled him to restructure his debt and save his operation.

MAINE

All 16 counties in Maine are involved in giving intensive help to farmers and communities in 1985. Maine estimated that 1,005 farm families now have severe financial problems and a strong need for assistance. Extension has provided that kind of help to 206 families in the past 2 years. During the same period, Extension trained agricultural lenders, consultants, and other professionals to better assist farm families. It is estimated that those who received this intensive training have helped some 938 additional farm families.

Intensive educational efforts include visits and consultations with families either on their farms or in the Extension office; individual financial assistance by telephone discussion of problems; organized problem-solving sessions with farmers in small groups; a 10-part correspondence course on farm tax management; and a consultant/task force method where the consultant on invitation visits a farm family, with Extension follow-up by appropriate individuals and/or groups. Often Maine farm families suggest that Extension's main contribution, besides technical assistance, is helping the family keep up their courage and deal with day-to-day stresses.

Extension financial management education focused on the dairy sector in 1984. About 45 percent of the state's dairy producers attended three area information meetings, and a new Maine Dairy Crisis Management program was established. Looking ahead to 1986, Maine Extension plans an increased use of microcomputer software; more efforts for non-farm small businesses; more educational publications; and a more intense effort in marketing, management, and control of internal costs.

VERMONT

Financial problems and pressures, particularly in the dairy economy, have resulted in an estimated 1,000 Vermont farm families suffering severe financial stress during the past 2 years. Of this number, Extension has provided intensive help to 205 families, assisting 100 of the families with major stress problems. Of the total group, 112 farms will probably continue farming on a full-time basis, 40 will combine some off-farm work, and 30 will make the transition out of farming. On-farm counseling, workshops, and computer programs provide direct help to farmers; mass media (newsletters, radio, newspapers) are filled with general financial items, and classes are conducted with Farmers Home Administration (FmHA) participation. Where volunteers have become involved, they have included the legal community, and all this activity is expected to increase in 1986.

With the farm business complexities of the 1980's, Extension farm managers at the county level used a team concept in Vermont to assist many farm families. The team included Extension professionals, usually a FmHA representative, and various local business owners. Although often overlooked, the need for legal counsel is critical to develop wise business decisions in the farm operation and market. Extension surveyed farmers about how they use legal services and their priority of legal problems. Involved attorneys have agreed to work through the Extension agent to help individuals define legal problems. A legal education series for farmers in early 1986 will focus on estate planning and lease/credit contracts.

Financial stress on many family dairy operations also brings on personal stress. The Extension home economist in Addison County conducted a mail survey in June 1985, with follow-up contact to develop a support group. The newly formed Farmers Support Network is a group of trained local volunteers who can provide a resource of support and reassurance for farm women. In the future with a much expanded group, professional resources will be employed to introduce concepts regarding strengthening inter-personal relationships and the management of the farm business.

EXTENSION SERVICE, USDA

At the federal level, Extension Service, USDA, continues in its national leadership role through development and funding of several regional and national workshops, projects, and programs. Several of these are:

- Eighteen Intensive Efforts -- FY 1985 appropriations of $1 million funded 18 intensive efforts involving 22 State Extension Services to implement changes for improving the present situation of financially distressed farmers. Key factors in state project selection were number of farmers targeted and magnitude of the farm crisis. Projects include cooperative involvement of FmHA and other agriculture lenders, financial management workshops, one-on-one counseling to prepare revised financial plans, local community involvement and support, computer decisionmaking packages, counseling centers and hotlines, multi-media education and awareness, and evaluation of program impact and changes made by farm families.

. North Central Region Stress Management Project -- Extension family life specialists are actively involved with farm families in developing teaching modules to answer needs in stress management which these families identified in a recent survey. Extension Service-USDA, is funding this special needs project in 5 states -- Iowa, Michigan, Minnesota, Missouri, and Nebraska -- with a $50,000 grant. Educational materials, including videotapes, slides, and teaching aides have been tested with farm families and are being made available for sharing with other states in the region and Nation.

. Additional Special Projects -- Other special projects funded by Extension Service, USDA, include: North Dakota--training financial management consultants; Nebraska--to assist the "Managing for Tomorrow" program; Minnesota--to establish the Farm Financial Management Center, and Texas--to assist financially distressed farm families.

. High-Tech Financial Assistance -- Working with the University of Nebraska and a range of technological experts, Extension Service, USDA, funded a special project involving interactive video disc technology connected with microcomputers in order to create an "interactive video" program on financial management for farmers. The program will instruct producers--through text, sound and video--how to construct a cash-flow projection for their own individual farm for use with lenders in applying for loans. Farmers will be able to use the program alone and tailor it to their own personal needs.

. National Workshop on Response to the Farm Crisis -- In cooperation with the University of Missouri, Extension Service, USDA, sponsored a national workshop in October 1985 for 100 farm management specialists from 44 states across the country. The workshop focused on sharing ideas, programs, and methods for dealing more effectively with the Nation's financially distressed farm families in the months ahead.

. Regional Sharing of Ideas and Resource Materials--Family resource management specialists in 11 midwestern states have formed an information network to share ideas and materials aimed at helping farm families in distress. This linking of programming efforts has reduced duplication of efforts and strengthened capacity to quickly meet the needs of farm families.

. FmHA and FCIC Cooperative Efforts -- Cooperative efforts with FmHA and FCIC have been carried out to strengthen and expand programs for assisting farmers with financial problems. Memorandums of understanding with these agencies were implemented to facilitate operation of cooperative programs. During the 1985 winter and spring period, Extension personnel across the country assisted farmers in preparing cash flow projections and in preparation of FmHA loan applications. Extension also conducted training programs for FmHA personnel at the national and state levels. Assisting producers to understand and utilize risk management strategies has been the focus of a number of special projects jointly conducted by Extension and FCIC. These special projects gave particular attention to the possible use of crop insurance to provide protection for a farmer's minimum cash flow needs, and for protection against catastrophic financial losses.

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THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

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The Farm Structure of the Future: Trends and Issues

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AMERICAN AGRICULTURE is a diverse industry which is constantly responding to economic conditions and new technologies. Farmers are now increasing their production with a changing mix of resources—land, capital, labor, and management. Simultaneously, other characteristics in the structure of U.S. agriculture are also changing. These changes in how the farm system is organized and in related distributions of income and wealth are of concern to farmers, rural people, consumers, and agricultural policymakers.

The structure of agriculture refers to how farm resources are organized and controlled. Structure includes the number and size of farms, the ownership and control of farmland and of capital and labor, the arrangements for input and producer marketing, and other factors which affect decision making and the control of resources.

Traditionally American agriculture was dominated by "family farms" on which farm operators and their families provided most of the labor, made the mangement decisions, owned part of the resources, accepted most of the production and price risks, bought and sold in the open market, and depended on the farm as their major source of family income. Family farms have been revered since the days when Thomas Jefferson argued for national policies of public land distribution that favored small, independent landholders. In recent years, the dispersed, independent farmer, open market system of farming has become less dominant in the American agricultural industry. A major question being asked today is whether this family farm system should continue and whether society should take steps to halt present trends which are gradually diminishing its prominence.

Providing enough food for U.S. consumers is not a current concern. The U.S. comprises only 5 percent of the world's population but it produces about 20 percent of the world's grain. Even while exporting one-fourth of their total production, U.S. farmers produce enough food to keep U.S. consumers among the best fed in the world.

Although U.S. agriculture is highly productive, various public interest groups are concerned about the changes in the structure of agriculture and the possible effects of these changes on the future agricultural industry and on related public economic and social goals. Members of these groups have expressed concerns about whether our future agricultural industry will use resources productively and efficiently, whether it will produce what consumers want at reasonable prices, and whether it will be resilient in the face of economic stress and change.

Changes in the structure of agriculture raise questions about the distribution of wealth and income among farm operators, farm workers, and others who own and supply farm resources as well as about whether new farmers can get a start in farming by any means other than inheritance. Rural people are concerned about the effect these changes will have on the economic and social viability of rural communities. Another issue involves the question of how federal, state, and local government policies and regulations affect farm resource organizing and managing decisions, and how these, in turn, affect demands for governmental assistance. Many people are concerned about whether the family farm system will survive and whether it will retain its characteristics of independent farm operators, opportunities for new farmers, dispersed land ownerships, and open markets.

Recent Evolution in Farm Structure

The traditional family farm is losing its dominant place in rural America as agriculture continues to move toward larger but fewer farms, more part-time farmers, changes in ownership patterns, specialization in particular crop and livestock enterprises, and big industry production of some commodities. This evolution results from the interaction of several factors including mechanization, new techniques in plant and animal production, the economic advantages of larger sized farms, market forces, the large capital investments required for farming, and public policies affecting agriculture. It also results from international demands for U.S. farm products and general economic conditions in the U.S. farm economy.

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Taken from the series, "The Farm and Food System in Transition," a Cooperative Extension Project.

Numbers and Sizes of Farms[1]

A very obvious change in agriculture is the trend toward larger but fewer farms. The number of farms in the U.S. reached a peak of about 6.8 million farms in 1935 and this number has now dropped to approximately 2.4 million. The rate of decline has slowed since the late 1960's with practically no change between 1974 and 1978 agricultural census periods. Researchers estimate that the total number of farms has not changed significantly since 1978 but that the changes in size distribution have continued.

The total amount of land in farms, about 1.0 billion acres, has declined only slightly since the 1930's, which means that average farm size has increased inversely to the decline in farm numbers. However, the present average sized farm for the U.S., just over 400 acres, has little meaning because of the way in which farm size is distributed. Forty percent of U.S. farms have less than 50 acres. Seven percent range from 1,000 acres to many thousands.

The difference in size distribution is even greater when measured by share of production or sales per farm as shown in Table 1. Small farms with annual sales of less than $10,000 comprise nearly half of total farms but account for less than 4 percent of total farm cash receipts. On the large end of the size spectrum, those farms with annual sales over $200,000 comprise just over 4 percent of the farms but account for nearly half of total farm cash receipts.

Because of the large number of small farms, the decline in farm numbers is concentrated among smaller farms. However, the rate of decline is greater among the intermediate-sized farms. Furthermore, the increase in the number of larger farms contrasts sharply with the decline in number of intermediate-sized and smaller farms. The current trend in farm size distribution is toward some decline in total number but the continuation of many smaller farms, a sharper decline in number of intermediate-sized farms, and a continued increase in the number of large farms.

These statistics reflect a combination of developments. Farmers operating the intermediate-sized units frequently find that farm income is inadequate with the result that they are under pressure to acquire more farm resources, to adjust farm activities in order to combine farming with nonfarm employment, or to leave farming altogether.

In 1981, over 60 percent of all farm units had less than $20,000 in farm product receipts, as shown in Table 1. Household members on most, but not all, of these farms have off-farm jobs and income as well. They are often referred to as part-time farmers. As shown in the table, these smaller farmers as a group showed a small loss in net farm income but averaged $17,000 to $20,000 in off-farm income. However, a significant number of these smaller farmers have very limited income even when both farm and off-farm income are considered.

Types of Farms and Size

The number of family farms is declining in comparison to other kinds of farms but they still account for a major share of total farm production. If small farms are included, family farms comprise about 90 percent of all farms and account for about 60 percent of total farm product sales.

"Larger than family farms" are organized like the family farms but they hire more labor. By one USDA definition, larger than family farms are those that require more than 1.5 man-years of hired labor. These farms constitute 5 to 8 percent of farms and account for 20 to 25 percent of total farm product sales.

"Industrial farms" are organized more like big business, separating ownership, management, and labor. These are usually specialized farms producing

Table 1—Distribution of Farms, Total Cash Receipts, and Farm and Off-Farm Income Per Farm by Sales Class, 1981.

Sales Class *Value of Farm Products Sold*	*Number of Farms*	*Percent of All Farms*	*Percent of Total Cash Receipts*	*Average Net Farm Income*	*Average Off-Farm Income*	*Average Total Income*
Less than $5,000	857,000	35.3	1.4	$ -699	$20,216	$ 19,517
$5,000-$9,999	332,000	13.6	1.9	-703	19,112	18,409
$10,000-$19,999	286,000	11.8	3.2	-189	17,132	16,943
$20,000-$39,999	279,000	11.5	6.3	1,533	12,777	14,310
$40,000-$99,999	388,000	16.0	19.3	8,022	10,469	18,491
$100,000-$199,999	179,000	7.4	19.1	26,263	10,810	37,073
$200,000-$499,999	83,000	3.4	18.8	69,842	13,134	82,976
$500,000 and over	24,000	1.0	30.0	684,841	25,247	710,088
All Farms	2,428,000	100.0	100.0	$ 12,349	$16,383	$28,732

Source: *Economic Indicators of the Farm Sector: Income and Balance Sheet Statistics, 1982,* ECIFS 2-2. USDA Economic Research Service, 1983.

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[1] The census definition of a farm has changed a number of times since 1850. Since 1975 the census definition of a farm has been "any place from which $1,000 or more of agricultural products were sold or normally would have been sold during the census year."

commodities such as broilers, eggs, sugarcane, fruits, vegetables, and fed cattle. They comprise less than 2 percent of farms but they account for 15 to 20 percent of total farm product sales.

Incorporation as a form of farm business organization has been increasing. By 1978 there were about 50,000 incorporated farms. Nearly 90 percent were family held corporations formed for management and tax purposes. In operation these corporations are similar to ordinary large family farms.

Land Tenure

The ownership and control of land are important structural features of agriculture. There are 6.2 million owners of farmland in the U.S., including individuals, partnerships, and corporations. Nationally 5 percent of these owners own 53 percent of the farm and ranchland. This concentration of ownership varies by regions. In the Northwest 5 percent of the owners own about 70 percent of the land. In the Corn Belt 5 percent of the owners own 27 percent of the land. Other regions vary between these extremes.

Nationally, farm operators own about 60 percent of the farmland; they rent 40 percent from other owners. These proportions have not changed significantly during the last 30 years. The significant change in tenure among farm operators has been the shift toward part owners—that is, farm operators who own part of their land and expand their operations by renting additional land. In 1950 part owners comprised 15 percent of farmers and operated about 40 percent of the land. In 1978 they constituted 29 percent of farmers and operated 57 percent of the land.

Full owners have remained fairly constant at about 58 percent of farmers, but the percentage of full tenants has declined. In 1950 full tenants comprised 28 percent of farm operators and farmed 18 percent of the land. In 1978 they accounted for only 13 percent of farm operators and farmed 12 percent of the land.

Dynamic Aspects of Change in Farm Structure

Changes in the structure of U.S. agriculture have occurred rapidly since the early 1940's, and these changes have become even more obvious in the last 20 years. Several factors have contributed to the continuing changes in farm structure. These include new technology involving high capital costs, high capital requirements for farming, reduced needs for farm labor, off-farm job opportunities, and various public policies.

The Role of Technology

Technology has enabled farmers to change the mixes of resources they use and to greatly increase productivity using the same amount of land but less labor. Since 1940 the number of average annual farm workers has dropped from over 10 million to under 4 million. During this same time total farm production has nearly doubled.

Technology is labor saving, land saving, and capital using. Farm mechanization has been primarily labor saving and has led to one man being able to handle more land or more livestock. At the same time land saving technology, primarily biological and chemical, has increased crop and livestock production from land resources. Together labor saving and land saving technology have greatly increased farm output per person. Since 1945, the average acreage per farm has more than doubled and the production per man-hour has increased sevenfold, but the capital requirements per unit of production have increased correspondingly.

Technology and the capital investments which are required of a farmer using it encourage farmers to specialize in crop and livestock production. Pesticides and fertilizers reduce the need for crop rotation and diversification. Technology in livestock feeding and disease control permit poultry and livestock producers to specialize in very large operations.

Adopting mechanization and production technology permits farmers to expand their farm operations and to reduce their per unit costs of production. For example, a corn farmer invests in modern tillage, planting, and harvesting equipment and uses high yielding seed varieties, optimum fertilizer levels, and chemical weed control. With this combination of resources the farmer can handle many more acres per person and get a greater yield per acre so that total costs per bushel may be reduced. These economies of size have been a major force in creating larger farms. However, many farms have expanded beyond the point where least cost is first reached. Expansion beyond this point results from a farmer's desire to increase income.

Some technologies have been adapted to facilitate small scale farming as well. Part-time farmers holding off-farm jobs find it possible to operate their farms by working in the evenings and on weekends. Mechanization, chemical fertilizers, pesticides, and drugs for control of livestock diseases all enable them to do this.

Labor Requirements and Mobility

As mechanization has replaced the need for labor on farms, job opportunities in the nonfarm economy have also contributed to the transformation of U.S. agriculture. Many people have decided that nonfarm opportunities are more attractive than their prospects in agriculture. By 1977 the U.S. farm population was less than 8 million, compared with a high of over 32 million in the post World War I period and again at the height of the depression of the 1930's. If nonfarm job opportunities had been fewer, more people would have stayed on farms. Nevertheless, farm numbers could have adjusted more rapidly. Due to their age or abilities, many farmers did not have skills for nonfarm employment, and many farm families prefer rural life even if it means lower incomes. Thus farm numbers did not decline fast enough to permit average farm family income to keep up with average nonfarm family income.

Capital Needs and Financing

Sharply rising land values, inflation, and the costs of adopting new technologies have greatly increased the capital requirements of those farmers expanding their operations. The availability of short-term and long-term credit has made it easier for farmers to consolidate their resources into larger units and to use newer technologies which require increased capital.

Historically farmers' land values have been high in comparison to their current earnings because land buyers capitalized expected future earnings from farm expansion, appreciation of land values, and improved yields due to technology into the prices they were willing to pay. This meant that current incomes on newly purchased parcels of land were not sufficient to meet cash flow requirements. The land price boom of the 1970's further exaggerated this cash flow problem. More recently farm earnings have been down and land values have declined somewhat.

Those most able to buy land are well established farmers with equity or off-farm investors with income from other sources. Credit institutions are willing to finance the expansion of established farms but they may not be willing to finance beginning farmers or small farmers trying to buy more land, who depend on current farm income to make payments on loans.

Similar financial restrictions, but less severe ones, apply to beginning farmers and small farmers attempting to rent land or to invest in livestock enterprises or other specialized production. The large amounts of capital required and the high interest payments give the competitive advantage to the established farmer who is expanding an operation rather than to the beginning or smaller farmer.

During periods of inflation farmers with limited resources are at a disadvantage in obtaining credit. They have difficulty demonstrating that they can meet mortgage payments entailing interest rates which are often greater than current returns to their farm assets. Accordingly, the economic position of wealthier, higher income people is strengthened during such periods.

Evaluating Change in Farm Structure

An evaluation of the changing structure of agriculture includes public concern not only about farmers and their families but also about the productivity of agriculture, land ownership, the status of farm workers, and the effects of change on rural communities.

Efficiency and Productivity in Agriculture

The efficient use of agricultural resources helps consumers by providing them with an adequate supply of food and fiber at relatively low cost and helps farmers by allowing them to remain competitive in domestic and export markets. Historically the intermediate-sized family farm which has dominated agriculture has been efficient in production, responsive to changes in market demands, and resilient under economic stress. Analysis of the current trends in the changing structure of agriculture indicates that the most efficient farm size and organization varies with different types of commodities.

In general crop production sectors, intermediate-sized farms seem to achieve most of the efficiencies of production. The most efficient size does not remain static but increases over time with the use of technology. Research indicates that minimum costs per unit of output are achieved by intermediate-sized family farms but that these costs do not increase as farms get larger. That is, there are no significant diseconomies of size. This implies that from the standpoint of producing food efficiently, intermediate-sized family farms are as efficient as large farms. However, farms continue to enlarge because net income increases with size. Large farms have a competitive advantage in purchasing inputs at lower costs and in accumulating capital to use in acquiring new technologies and expanding the business. Also, income tax rules encourage continual expansion as a way to reduce tax liabilities.

Current research evidence suggests that there are efficiency advantages of size in certain types of livestock production and in some specialized fruit and vegetable enterprises. Large-scale and integrated operations in poultry production and beef feeding account for major shares of national production. Family farm size operations still dominate hog production and dairy farms, but large-scale operations are increasing in some regions —for example, the large drylot dairy farms in the Southwest. Large-scale producers of certain fruits and vegetables appear to have economic advantages over small producers.

Family farms have proven themselves resilient and able to maintain production under economic stress caused by weather or depressed income. Large farms may be somewhat less adaptable under some economic stress conditions. Regardless of farm size, the ability to make annual debt payments is a primary determinant of a farmer's ability to withstand adversity. Both family farms and large farms appear to be efficient in use of resources and in producing adequate supplies of food and fiber.

Land Ownership and Entry by Young Farmers

Land ownership and control significantly affect the distribution of farm wealth and income. Widespread, unrestricted ownership of land and ownership by farm operators has been the American tradition and this tradition has helped to shape the structure of agriculture. Although U.S. farmland is distributed among nearly 7 million owners, much of it is concentrated in the hands of larger landholders. Traditional patterns of land ownership and control are changing. Concentration of ownership is shifting to larger farms and to some extent to wealthy nonfarm investors. Part-owners of larger farms manage an increasing share of the land through a combination of ownership and rental. An increasing share of land is owned and controlled by partnerships, family-held corporations, and other corporations instead of by the traditional individual landholder. How fast these changes are taking place is difficult to measure but they are gradual. Less than 3 percent of farmland changes hands annually.

If the family farm structure is to be a major part of the future U.S. agricultural industry, there must be opportunities for new entrants and for small and intermediate-sized farmers to gain additional land resources. Inflated land values and high capital requirements for farming make getting started extremely difficult unless beginning farmers can participate in ongoing family farm businesses. Economic incentives and tax provisions encourage landowners to hold onto land rather than sell it to potential farmers. Present trends indicate that more and more land will be owned by hereditary landholding families or, as some would say, by a "landed aristocracy."

Land ownership and the structure of agriculture are closely related. If the public accepts present land ownership trends, no major policy changes are needed. However, if the public sees a need to alter present trends by slowing or reducing the concentration of ownership, new planning will probably involve changes in a range of policies that affect the returns from ownership of land rather than changes merely in specific policies on who can own land and how much they can own.

Types of policies that could influence land ownership include: credit programs aimed at assisting beginning farmers, new rental/purchase arrangements for beginning farmers with public assistance, adjusting income tax and estate tax provisions that now favor large and expanding farmers, preferential property tax laws on land use and ownership which favor beginning and family farmers, placing limits on corporate farm operations, and other policies aimed at achieving public goals for land ownership.

Farm Labor Needs

Farm family workers have been the major farm labor resource throughout much of U.S. agricultural history. The hired labor market has affected farm structure only marginally. Rather, farm mechanization and the changing farm structure have tended to shape farm labor markets.

Total farm employment continues to decline but in recent years the number of hired workers has slowly increased. The annual average number of hired farm workers declined from a peak of 3.4 million in 1920 to 1.2 million in the early 1970's. The number has now leveled off at about 1.3 million, which is about one-third of total farm employment. About 3 million different workers are employed on farms, but about 60 percent are short term seasonal workers and 25 percent are longer term seasonal workers. Only 15 percent are employed full time in agriculture. Seasonal labor dominates in the specialized fruit and vegetable production areas.

Farm labor policies have been aimed at improving the lot of hired workers. Federal and state protective legislation has gradually been extended to farm workers, beginning with Social Security and now including minimum wage legislation, worker's compensation, unemployment insurance, and health and safety regulations. However, much of this legislation covers only farms with above a minimum number of workers so it does not apply to the typical family farm.

Future public policies on farm labor need to be aimed at two general objectives: (1) continuing to improve the economic opportunities and position of farm workers, (2) helping to provide the agricultural industry with a supply of workers so that large farms and family farms can meet their labor needs at competitive labor costs. At times these two objectives may be in competition with each other.

Implications for Rural Communities

The changing farm structure will continue to affect economic and social conditions in rural areas but not to the extent that it has in the past. Following years of farm population outmigration and the growth of nonfarm economic activities in rural areas, farming no longer dominates rural America in many sections of our country. Farm people make up only 15 percent of the national rural population.

The relative importance of agriculture in rural communities varies widely in different areas of the country. In parts of the Corn Belt and the Great Plains, rural communities depend heavily on the farm economy. Over 600 of the approximately 3,000 counties in the U.S. are basically agricultural counties. In these counties, continued enlargement of farms and specialization in agricultural production will hurt smaller rural communities. Although the markets for specialized farm supplies and services will expand, they will tend to be centered in larger towns. In smaller communities there will be less support for private business and less support for local governments, schools, churches, and other community institutions.

If future policies are to help maintain viable rural communities in areas dominated by farming, these policies must help maintain the family farm system, encourage economic development and nonfarm job opportunities in these rural areas, and help part-time farmers to improve their nonfarm incomes.

Policies That Affect Farm Structure

Federal policies have influenced the structure of agriculture in several ways. Although most public policies aimed at agriculture were initiated and designed to help family farms, their net effects have often encouraged the enlargement of farms. If present trends in the changing structure of agriculture do not coincide with public goals, the elected representatives of the public can develop policies to alter the direction of agricultural change.

Credit Policy

A viable changing agricultural system needs capital which can be generated from internal savings or borrowed from outside the system. Starting with the enactment of the Federal Land Bank Act in 1916, agricultural policymakers have attempted to provide farmers with a plentiful supply of capital at reasonable rates. Credit policies have given farmers access to capital through the Farm Credit System, the Commodity Credit Corporation, the Farmers Home Administration, and the Small Business Administration.

Abundant supplies of relatively low cost capital have helped build a modern, high technology, productive agriculture. Easy access to capital may have encouraged overinvestment in farm production assets and contributed to inflated land prices. These changes coincide with the enlargement of farms. It would appear that public credit policies which supply low cost capital have contributed to present trends in the changing structure of agriculture.

Credit policies do influence farm structure. To what extent should the Farmers Home Administration or other special programs be aimed primarily at beginning farmers, low resource farmers, and small family farms? These farmers need assistance if they are to compete with larger, established farms in gaining access to land and capital resources.

Farm Income-Support Programs

Various farm income-support programs have been part of federal agricultural policy since the 1930's. These programs for grains, cotton, dairy products, and other selected commodities have generally included provisions to improve farm income through price supports, adjustment of national production through idled crop acres, commodity storage, and market expansion. Price and income-support programs have been based primarily on volume of production per farm, which means that large farms received more income benefits than small farms. However, research indicates that this type of income benefit by itself resembles a general price increase and apparently offers no significant incentives to enlarge farms.

The indirect benefits of commodity price and income-supports are the reduction of risk and uncertainty, and these benefits appear to affect farm structure. With reduced risk, farm operators are encouraged to borrow money to invest in additional land and technology and specialized production. Guaranteed returns, particularly, encourage long-term investments such as land purchases or the construction of modern livestock facilities. With these program benefits the larger, well established farms can expand further with less risk.

If maintaining the family farm system is important, farm income-support programs could be aimed toward giving more advantages to family farmers. Farm program benefits, such as direct payments to meet target prices, commodity loan provisions, or other direct benefits might be targeted more directly to family type farms. Strict low level limits might be established on the amount of federal payments that any farmer could receive per year. The program emphasis might be shifted from commodity price supports to maintaining farm family income. There would be administrative problems in implementing these policy options. To effectively influence the future structure of agriculture, farm income-support programs would need to be coordinated with other public policies which affect agriculture.

Tax Policies

Tax policies influence farm structure. Farmers are subject to the same broad range of federal, state, and local taxes which nonfarm individuals and business firms pay. Federal income tax provisions, including investment credit, fast depreciation of equipment and facilities, and capital gains tax rates designed to encourage business investment, also apply to the farm business. In addition farmers can use cash accounting not including inventory for tax reporting, which is advantageous to the expanding farm business.

Present tax policies encourage the enlargement of farms. Investment credit and fast depreciation allowances encourage investment in mechanization and farm expansion by reducing machinery costs for larger, higher income farmers. Capital gains tax rates encourage larger farmers and outside investors to invest in agriculture. Income tax and estate tax provisions encourage landowners and landholding families to hold their land, which creates difficulties for new farm entrants. Tax policies tend to significantly benefit present landowners but they make it more difficult for nonowner farm operators or beginning farmers to buy land. Present trends will lead to land ownership being increasingly concentrated among landholding families.

In developing future tax policies which affect farm structure, policymakers need to consider the type of farm structure preferred. Much of the current tax policy which encourages enlarging the farms applies to the nonfarm sector as well. Should changes be made selectively to apply only to agriculture?

If the public wants to encourage the continuation of the family farm and reduce the incentives for farm enlargement, a number of policy changes could be considered. Benefits from capital gains tax rates and investment tax credits might be reduced or eliminated. Provisions which allow writing off farm income losses against nonfarm income might be eliminated. Estate tax laws might be changed to reduce the incentive for "landholding." Farmers might be required to use the accrual method of accounting which includes inventory. States might establish progressive property taxes to reduce farmers' incentives to expand.

Market Policy

The marketing system influences the structure of agriculture. Farmers depend on the farm input or supply markets as they produce crops and livestock and they depend on the farm commodity markets for selling their products. These two major market systems have developed in response to a changing agriculture.

Farm input markets have adapted and expanded to provide farmers with inputs for new technologies. Farm input firms can provide supplies and services to large farms at lower unit costs than to smaller farms. This gives large farms an economic advantage, though some farm supply cooperatives have effectively reduced the differences in input costs between large and small farms.

Farm commodity markets have also adapted to the changing farm structure. Contract arrangements and vertical integration (unifying a business from farm production through processing and marketing) have expanded in markets for products such as fruits, vegetables, poultry and beef. In beef and hog marketing, the open or terminal markets with competitive bidding are being replaced by direct market arrangements between the producer and the buyer, such as direct sales to processors and contract sales. Grain and oilseed markets depend heavily on open terminal markets, but farmers are increasing their use of forward contracts, futures markets, and negotiated direct sales. Except for the open market, these market alternatives are better adapted to larger farms, giving them some economic advantage over smaller farms.

If all sizes and types of farms are to have more equal market opportunities in the future, policies affecting the market system and its use might include maintaining a strong public market information system and assuring an open market system for all farm products, which might include the support of electronic marketing for particular commodities. Policies might also include providing a program to help smaller farmers use alternative marketing arrangements and strengthening the role of farmer cooperatives in both the input and product markets.

Public Research and Extension

Publicly supported agricultural research and extension educational programs have contributed to greatly increased agricultural productivity. Consumers have benefited significantly from this productivity, which makes a wide variety of food and fiber products available at relatively low prices.

Have research and extension programs encouraged farm enlargement? Most agricultural production research has been scale neutral. That is, the new technology has been adaptable to all sizes of farms, and extension information on technology has been available to all farmers. However, the more aggressive, better capitalized farmers are usually the first to seek out new information and to adopt new technology so they tend to gain more benefits. Part-time farmers have other major income sources so they place less priority on new farming methods. Small full-time farmers may have limited human and capital resources for committing investment to new techology.

Although most information from research and extension can be adapted to farms of various sizes, research and extension programs probably have facilitated the trend toward larger farms by making new technology available. This technology permits aggressive, expanding farmers to more efficiently organize their resources (land, capital, and labor) into larger units.

It is also important to recognize that research and extension have focused on the efficient use of resources in agriculture. Facilitating the transfer of excess agricultural resources, especially labor and capital, from farming to other alternatives has received only limited attention.

Future agricultural research and extension efforts need to be continued in the multiple areas which help the agricultural industry to increase production and respond to changing markets and consumer needs, but more research and extension work could be aimed at helping smaller and intermediate-sized farms to maintain economic viability.

Policies could encourage expanded research in technology and management particularly adapted to smaller and intermediate-sized farms. More research is needed on policies and economic factors that influence the structure of agriculture. Future extension programs could aim a greater share of their educational efforts in production and management at the moderate-sized family farm.

Family Farm Survival—Is It An Issue?

Should public policies aim at helping the family farm survive? American tradition has favored the family farm type of agriculture, and family farms still account for a major share of U.S. farm production. But larger and more specialized farms are now beginning to dominate agricultural production. Public policies help shape the structure of agriculture and many current U.S. policies, though they were initiated to help family farms, have in fact encouraged change in the structure of agriculture. Our nation has benefited from this shift to a modern, productive and efficient agriculture, but it may not benefit from a continued shift to larger farms.

The present 2.4 million U.S. farms are characterized by extreme diversity. The current mix of specialized farms, large farms, intermediate-sized farms, small farms, and those operated by part-time farmers has resulted from economic and social forces and from various public policies. The pertinent issue is whether public policy should aim at creating an economic climate which will help the family farm to compete in a diverse agriculture. To be productive and efficient, a family farm must adopt new technology. Such a farm will probably continue to become larger but it will maintain the characteristics of a farm business operated by the farmer and his family.

The family farm can continue to be a viable part of the future structure of agriculture if the economic climate permits it to adapt to a dynamic industry. Public policies can help to provide this climate. Conditions favorable to continuing the family farm include: competitive access to land and capital resources, opportunities for farmers to improve management abilities, ready access to agricultural research and extension, reasonable income protection for family farms, easy access to markets, opportunities for off-farm employment, tax policies that do not place family farms at a disadvantage, and other policies adapted to the particular needs of farmers.

In our democracy, the public can decide what type of farm structure it prefers. Through the use of the political process citizens can devise policies to develop a farm structure which will help to achieve our economic and social goals.

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Mindy F. Petrulis

Effect of U.S. Farm Policy on Rural America

Most analyses of farm policy focus on totals: total cost to the Treasury, total number of farmers affected, total volume of farm production, total number of farm jobs. This article adds another dimension to the debate, often missing from such analyses: it identifies 702 counties heavily dependent on income from farming and likely to be hardest hit by policy changes. Even within that group of counties, those with the higher concentrations of farm-related employment are more affected than others by policy changes.

When most farm programs were initiated during the 1930's, agriculture and agricultural support programs dominated the well-being of rural America. But 30 years of farm consolidation, accompanied by the nearly uninterrupted departure of farm and nonfarm people from farm-dependent rural areas, and an almost equally long period of rural nonfarm job growth have changed that situation.

Today, most rural people do not depend on agriculture and USDA programs as principal sources of employment or income. Many farmers are also less dependent because: (1) major program commodities (dairy, grains, cotton, and tobacco) account for only 36 percent of total farm cash receipts, and (2) the relative importance of nonfarm income has increased during the last decade, so that around 60 percent of total farmers' income now comes from nonfarm sources. Thus, changes in farm commodity policy are less important for most rural communities today than the growth and prosperity of the national economy, the effects of monetary and fiscal policy, and international trade.

Moreover, only 10 percent of labor and proprietors' income in nonmetro areas is attributable to farming.

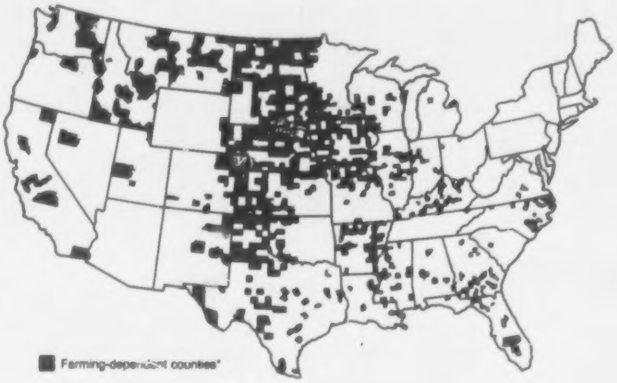
Nevertheless, more than 700 nonmetro counties (out of 2,443) are heavily dependent on agriculture. In more than 200 of these farm-dependent counties, nearly 50 percent of labor and proprietors' income is from agriculture. Nearly 500 of those counties receive large per capita outlays from Federal commodity programs. Clearly, communities in these counties are likely to be most affected by changes in agricultural prices and income support policies.

Farm-Dependent Counties

Farm-dependent counties account for about 30 percent of all nonmetro counties, but contain only 13.4 percent of the 1980 nonmetro population. These counties are concentrated in the western edge of the Corn Belt and in the Plains States with smaller concentrations scattered elsewhere (fig. 1).

The farm-dependent counties averaged a 1980 population of only 11,932 compared with an average 25,613 for all nonmetro counties. Forty-six percent have no incorporated town of 2,500 or more people, and almost 70 percent are not adjacent to a metro area. Farm-dependent counties had experienced high rates of population decline for decades, but declines have leveled off and some counties even experienced population growth in recent years (table 1). Despite the small population and remoteness of many farm-dependent counties, the relative size of their service sector is similar to that of all nonmetro areas—at about 28 percent of earned

Farm-dependent counties are concentrated in the Corn Belt and Great Plains



*Counties in which 20% or more of total labor and proprietary income comes from farming, 1975-79

Map compiled by Bernal Green and Peggy Ross, EDD-ERS.

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income. Given the dominance of farming in these economies, their service sector probably includes an important share of agribusiness activities. Thus, it seems likely that changes in programs affecting the farm population will be felt by many in the nonfarm population of the farm-dependent counties as well.

How changes in farm programs affect the local nonfarm economy will depend on how closely the nonfarm economy is linked to agricultural production and income. The effect will be less where the role of production agriculture is small in the local economy. It will also be less where farmers typically bypass local communities to purchase inputs or household items in more distant trade centers, or where crops leave the local area for processing.

Table 1—A profile of farm-dependent counties

Selected variables	Specialized agriculture counties (702)[1]				All nonmetro counties
	Top third	Middle third	Bottom third	All	
			Percent		
Proportion of earned income from agriculture, 1975-79	46	32	23	34	14.6
Population change, 1970-80	-0.6	5.9	9.1	4.8	14.6
Proportion of farmers who worked off the farm 100 days or more, 1978	25	30	35	30	41.0
		People/square mile			
Population density, 1980 population	10	19	25	18	32.0

[1] Nonmetro counties in which labor and proprietor income from agriculture was 20 percent or more for the 5-year period 1975-79. Thus, 702 of 2,443 nonmetro counties met this criteria. The 702 counties were divided into thirds according to their proportion of county income derived from agriculture.

Linkage of Farming to Rural Areas

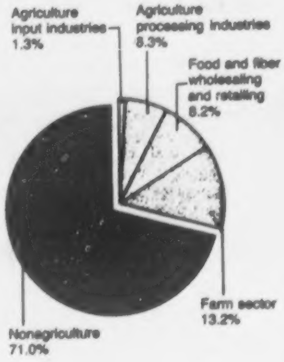
While we can identify farm-dependent rural areas likely to be most affected by changes in farm policy, we know relatively little about the geographic distribution of impacts on rural agribusiness. This sector includes agricultural input and processing industries, food and fiber wholesaling and retailing, as well as farming. Thus, it includes employment in farming and all businesses that support the delivery of food, clothing, shoes, and tobacco to domestic and foreign consumers (fig. 2). Defined this way, the food and fiber system nationally accounted for about 29 percent of the jobs held in nonmetro areas by the civilian labor force in 1979.

Agricultural production has always been strongly linked (for example, food transportation, processing, marketing, purchased inputs) to the local economy. In 1979, about 70 percent of the jobs in the farm sector (including farm proprietors) were in nonmetro areas, as were 54 percent of the jobs in agricultural input industries, 39 percent of the jobs in agricultural processing industries, and 39 percent of the jobs in food and fiber wholesale and retail trade.

Given the importance of agribusiness to the total nonmetro economy, changes in farm policy may substantially affect industries associated with agriculture. High price and income supports for commodity programs increase production of program commodities and generate a strong demand for purchased inputs. Industries that provide farm inputs like fertilizers, pesticides, fuel, equipment, farm machinery, credit, labor, and agricultural services (such as custom application, tilling, and harvesting) also benefit. On the other hand, some industries specializing in food transporting, processing, and marketing fare less well, since higher commodity prices resulting from commodity program provisions slow the growth and reduce the volume of products moving to markets.

Changes in commodity programs will affect some areas more, others less. For example, a 10-percent set-aside provision in the 1985 feed grains program will affect not only corn pro-

Figure 2
Importance of agriculture-related employment in the nonmetro economy, 1979



duction but also local employment opportunities in agriculture-related industries. Such effects may be especially significant for areas like the corn and soybean production areas of Minnesota where the farm sector and the agricultural input/processing industries accounted for 18 and 11 percent of total 1979 local employment, respectively (fig. 3). On the other hand, in the irrigated cotton-growing areas of California where agricultural input and processing industries accounted for about 5 percent of the total 1979 local employment, farm program changes, while affecting individual farmers, may have only limited effects elsewhere in the local economy.

Other Effects of Farm Policy Changes

Some rural residents will also experience indirect gains or losses as a result of farm policy changes. High price and income support policies for program commodities resulted in asset appreciation (especially for farmland) and other equity gains. Some of these gains were unevenly distributed by farm ownership status, equity position, and enterprise size. As a result, many of the beneficiaries of existing policies appear to be rural landowners not directly involved in farming.

Reduced price and income supports could reduce land values. Highly leveraged farmers would face tightened lending criteria from local bankers, which could lead to a substantial number of foreclosures and forced liquidations, at least in the short run. Such actions would hurt nearby businesses and communities. Local businesses would suffer losses, and, along with other rural landowners whose wealth position would be eroded, would likely face stiffer credit conditions. At the same time, local banks would undergo a significant adjustment in their loan portfolios, profitability, and lending practices, putting a credit squeeze on many nonfarm rural residents.

Figure 3

Selected agricultural production regions

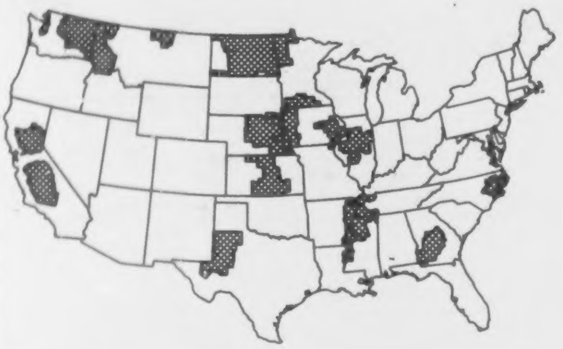


Table 2—Agriculture-related employment in selected agricultural production regions

State	Typical farm enterprise	Farm sector[1]	Agribusiness: Inputs to agriculture	Agribusiness: Agricultural processing	Food & fiber wholesaling & retailing[2]	Total agriculture-related employment
		Percent of total employment (1979)				
Arkansas	Soybeans-rice (irrigated)	8.8	1.3	6.8	8.1	25.0
California	Cotton (irrigated)	19.0	1.6	3.4	8.9	32.9
California	Rice (irrigated)	5.9	.5	1.7	10.4	18.5
Georgia	Peanuts-soybeans-corn	10.9	1.9	10.5	7.9	30.5
Illinois	Corn-soybeans	8.5	2.0	2.9	9.2	22.6
Iowa	Cattle-corn-soybeans	12.0	2.0	5.9	9.3	29.2
Iowa	Pigs-corn-soybeans-oats	8.5	5.0	4.5	8.9	26.9
Kansas	Wheat-alfalfa-sorghum	9.2	1.9	3.2	9.0	23.3
Minnesota	Corn-soybeans	17.8	3.2	7.6	9.7	38.3
Mississippi	Cotton-soybeans	16.2	1.7	3.7	7.6	29.3
Montana	Wheat-barley-fallow	17.6	2.9	1.6	9.1	31.2
Nebraska	Sorghum-wheat-alfalfa	15.6	3.3	4.9	8.9	32.7
North Dakota	Wheat-fallow-barley	19.9	2.3	3.0	8.8	34.0
Texas	Cotton (irrigated)	11.0	1.6	3.3	9.3	25.2
Washington	Wheat-fallow	12.1	1.3	2.3	10.2	25.9
North Carolina	Tobacco	14.6	2.3	9.8	7.2	33.9

[1] Includes farm proprietors and wage and salary workers.

[2] Includes processing of natural fibers for apparel and textiles.

Note: Production regions are delineated around typical farms producing specific major agricultural commodities and encompass one or more Rand-McNally Trading Areas. Thus, they represent a multicounty agricultural trading region specializing in various types of agriculture.

Lower price and income supports for program commodities will also encourage adjustments in land use. More marginal land would be removed from production and some agricultural production would shift to the lowest cost production regions where land might be used more intensively. This may have widespread effects on some rural areas. Producers of program commodities may have less interest in soil conservation, although erosion will be somewhat offset by the reduced cultivation of marginal land. Depending on how these effects balance out, the result could be additional siltation of waterways and environmental degradation for all rural residents.

Conclusions

Rural communities highly dependent on farming have specialized human and business assets of only limited use elsewhere in the economy. Significant reductions in farm price and income support policies would probably most severely affect residents of these specialized farming areas, which number several hundred, are highly concentrated in a few States, but are sparsely populated.

Diversifying the economies of farm-dependent communities will be difficult at best because of their small populations, their distance from most major urban markets, and their history of population outmigration, which has left them with a relatively high proportion of young and elderly.

During the past 30 years, rural America as a whole has become more diversified, significantly reducing its vulnerability to changes in natural resource markets, commodity prices, and farm policies. The economic futures of most rural citizens are tied more to national growth than to any one sector's success or failure. But this is not the case for farm-dependent rural counties—or for individuals elsewhere—whose economic fortunes are directly tied to agriculture. RDP

Agriculture's Problems Require "Macro" Solutions

The new farm bill is raising a number of questions. Is it a good bill? How will it affect farmers? Does it offer too little support from government, or too much intervention?

These questions deserve attention, but they can be misleading if they imply that farm legislation alone could be the key to renewed prosperity in agriculture.

In the article that follows, economist John Lee explains why this farm bill, or any other, is unlikely to solve some of the fundamental problems now facing American farmers. For farmers and their representatives to have an effective voice in policies affecting agriculture, they need to pay year-round attention to decisions on the direction of the U.S. economy. General economic policies, Lee contends, affect their broader interests as much as, or more than, a farm bill.

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The new farm legislation will be vitally important to American agriculture, perhaps for years to come. Resources throughout the agricultural community and beyond, into government, nonfarm industries, and public interest groups, were mobilized to prepare for and contribute to farm bill deliberations.

Why, then, do many agricultural economists continue to focus their attention elsewhere—on the health of the general economy and the policy decisions that affect it? Why are they suggesting that developments in these two areas could prove even more significant for agriculture than the 1985 farm bill?

The answer requires a basic understanding of *macroeconomic* policy and its impact on agriculture. Macro or general economic policies guide the actions taken by the federal government to shape the nation's economy. *Monetary policy* and *fiscal policy* are the two major components, and they are closely related.

Monetary policy deals with the supply and regulation of money and credit. Fiscal policy determines what the government spends and how it finances those expenditures.

A Primer on Monetary Policy

As the economy grows, it needs more money for normal commercial transactions, capital investments, and other purposes. Monetary authorities, primarily the Board of Governors of the Federal Reserve Board (often called *the Fed*), control growth in the money supply. Briefly, they do this by buying and selling federal securities and by setting rules and regulations for the nation's banking system.

The Fed can fuel economic expansion by allowing the money supply to increase faster than real growth in economic activity. When more money is available relative to the normal needs of the economy, interest rates tend to fall just as the price of any good falls when supply grows faster than demand. When interest rates drop, businesses invest more, consumers buy more, and overall economic activity increases.

Unfortunately, inflation also increases because more dollars are available to buy the same supply of goods and services, thus bidding up their prices.

Conversely, the Fed can "cool" the economy by causing the money supply to expand more slowly than real growth in economic activity. This makes money scarcer relative to the need for it, and that drives up interest rates. Higher interest rates discourage investment, consumer spending, and overall economic activity. At the same time, people have fewer dollars to pay for the same stock of goods and services, so inflation slows.

The Fed must do a balancing act, constantly adjusting the growth rate of the money supply to assure adequate funds for sustainable economic growth without fueling inflation. The Fed's tendency to favor one side of this growth-inflation tradeoff over the other is what characterizes the nation's monetary policy in any given period.

A quick review of recent history may help explain. For several decades culminating in the 1970's, the Fed "targeted" interest rates, allowing inflation to adjust as needed. Low, stable interest rates were maintained by increasing the money supply, which, in turn, tended to push up inflation. Inflation rates began to climb in the late 1960's and early 1970's.

After a number of attempts to check accelerating price levels in the 1970's, runaway inflation finally prompted a major shift in Fed policy. Since 1979, the Fed's policy has been to hold money supply growth within a given range, providing enough money for high but sustainable economic growth while keeping inflation in check. Instead, interest rates are allowed to float up and down to reflect forces in financial markets.

This policy shift has been crucial for agriculture, affecting the availability and cost of credit, inflation rates, land values, currency exchange rates, foreign demand, and economic growth here and abroad. More about that later.

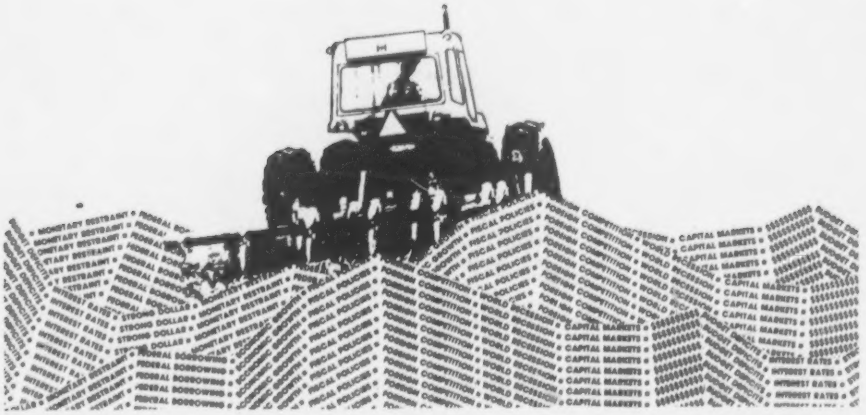
A Primer on Fiscal Policy

Fiscal policy determines how much money the federal government collects and how much it spends. Spending in excess of revenues creates a deficit, and deficit spending can stimulate the economy by pumping more money in than taxes take out. This increases the demand for goods and services, encouraging production and new investments.

Several strategies can be employed to finance federal budget deficits: The government can borrow money from private sources, the Fed can increase the money supply to fund the deficit spending, or some combination of both methods can be used.

Financing the deficit by increasing the money supply was the predominant policy from World War II until the late 1970's. The money supply was increased enough to provide for normal business needs and to cover the federal deficit. This created no major problems as long as budget deficits were mod-

Reprinted from Farmline, v. 7, Dec.-Jan. 1986: 4-7.



est and tied mostly to cyclical downturns in the economy.

During the 1970's, however, budget deficits grew and became more persistent as rising tax revenues did not keep pace with more rapidly rising federal spending. The policy of financing the deficit by printing more money began to fuel rising inflation. This was the logical result of letting the money supply grow faster than real economic activity.

With the shift in monetary policy at the end of the decade came a parallel shift in fiscal policy. Instead of increasing the money supply to cover the deficit, the government opted to fund the deficit like you and I do—by borrowing money. This policy, pursued more or less since 1980, reduces inflationary pressures but increases competition in credit markets, pushing up interest rates.

Agriculture in Double Jeopardy

In tandem, current fiscal and monetary policies have two striking consequences. First, they send conflicting signals to the economy, since rising deficits effectively put one foot on the accelerator while monetary restraint puts the other foot on the brake.

Second, and more important for agriculture, interest rates are driven up in two ways: by the fiscal policy of borrowing to finance the deficit, and by the monetary policy of allowing interest rates to float to allocate the more tightly controlled supply of money among prospective borrowers. The result is interest rates that, after adjustment for inflation, have been at historically high levels in the 1980's.

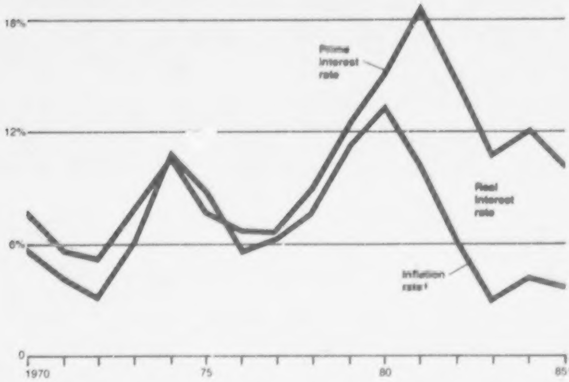
High interest rates are hardest on those sectors of the economy that are capital intensive and export oriented. Capital-intensive industries tend to depend very heavily on borrowed funds. Export-oriented industries are vulnerable to changes in foreign exchange rates, which are strongly influenced by real interest rates here and abroad.

Agriculture fits into both the vulnerable groups. It has the highest ratio of investment to sales of any major industry, making it one of the most capital-intensive sectors of the economy. It also has one of the highest ratios of exports to total production, putting it among the most export-dependent sectors.

We have just seen how large federal deficits and anti-inflationary monetary policy have combined to drive up interest rates. It is equally important, I think, to understand how interest rates and other effects of monetary and fiscal policies are channeled to the farm sector because of agriculture's links with the rest of the U.S. economy and the world economy.

These effects are difficult to trace through, but they can be grouped under three categories: effects on farm costs, effects on

A Major Shift in Economic Policy Ended Runaway Inflation, But Helped Drive Up Real Interest Rates



[a] As measured by the CPI-U *Forecast

the demand for goods that farmers produce, and effects on asset values.

Impact on Farm Costs, Land Values

Because farmers are heavy users of borrowed funds, rising interest costs have increased the costs of production in agriculture. In 1979, farmers' interest expenses amounted to $12 billion, or about 13 percent of all cash production expenses. By 1984, farmers paid more than $22 billion in interest on farm debt, or 19 percent of all costs. Interest had become the largest single cash cost of production in farming.

It is worth adding that when the average interest rate on outstanding farm debt rises by 1 percentage point, farm production expenses increase by about $2 billion.

The high cost of money has also helped to depress the value of farm assets, especially land. Other things being equal, the higher the interest rate, the less one can afford to pay for land.

The demand impacts of macroeconomic policies are just as important as the more obvious cost effects.

Interest on debt became the largest single cash cost of production in farming.

In the late 1970's, an overheated world economy produced galloping inflation, prompting the United States and other industrialized countries to adopt restrictive monetary policies. The less developed countries, meanwhile, were beginning to slow or trim their imports in response to mounting foreign debt problems. In 1980, the world was plunged into a severe recession.

It is against this backdrop of events that our domestic economic policies have had a series of negative effects on the farm economy.

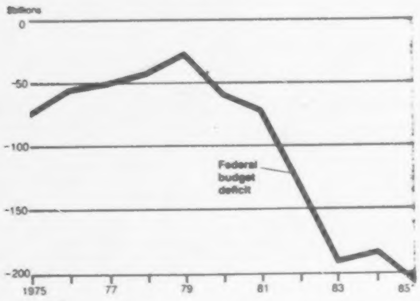
High real interest rates in the United States, coupled with foreign perceptions that the United States was and is a safe haven in troubled times, attracted capital from abroad. The United States quickly became a magnet for foreign investment. Demand for dollars to make those investments caused the dollar's value to appreciate sharply in terms of other currencies. (At the same time, the large inflow of foreign capital masked some of the pressure on our own credit markets, probably slowing the rise in interest rates caused by federal borrowing.)

Some rules of thumb: Each $50 billion of structural deficit in the federal budget causes real interest rates to be 1 or 2 percentage points higher than they would otherwise be. Further, for each 1 percentage point increase in the gap between real interest rates in the United States and those in other countries, the value of the dollar rises 5 to 10 percent.

Translates Into Weaker Demand

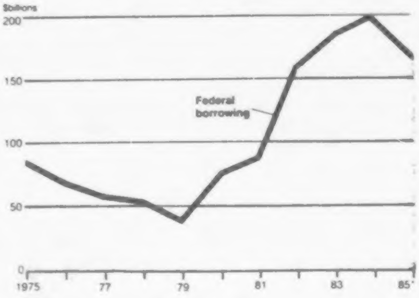
This increase in the value of the dollar—which is perceived as an export price increase for American goods—translates directly into weaker demand for our farm products. The higher value of the dollar relative to other currencies makes U.S. export goods more expensive to foreign buyers, while foreign goods look cheaper to Americans. Hence, U.S. exports decline, and our imports from other nations surge.

Growing Federal Budget Deficits . . .



*Forecast
Source: Bureau of Economic Analysis

. . . Financed by Large Federal Borrowing . . .



*Forecast
Source: Federal Reserve Board's flow of funds account

General economic data provided by economist Dave Torgerson

The lost exports end up as larger carryover stocks, which tend to depress farm prices and farm incomes. In other words, farmers end up selling a smaller volume, and often at a lower price.

There are other demand consequences, too, stemming from high real U.S. interest rates and the factors that cause them. As more foreign capital is banked in the United States, for instance, funds available abroad are reduced. Developing nations have less money to pay for imports and to invest in economic recovery and growth. Their potential to become better customers for U.S. farm products is directly tied to their economic growth. The drain of capital from these countries reduces both our near-term and long-term export prospects.

There is still more. The high cost of money and the attractive alternative of investing in dollar-denominated U.S. assets reduces the incentive of other nations to tie up money by holding commodity stocks. They do better by keeping their own food stocks at low levels, letting the United States shoulder the costs of stockholding.

> ***The drain of capital from the developing countries reduces both our near-term and long-term export prospects.***

Similarly, private U.S. firms facing high money costs also try to minimize nonessential stockholding, thus pushing the burden back to the farm level. This increases farm costs and reduces demand, the most obvious result of which is lower commodity prices.

A strong dollar has some redeeming features. Lower priced imports hold down U.S. inflation, and that helps hold down farmers' expenses. A 10-percent increase in the value of the dollar reduces the general inflation rate about 1 percent, and that could translate into a reduction of around $1.5 billion in farm production expenses.

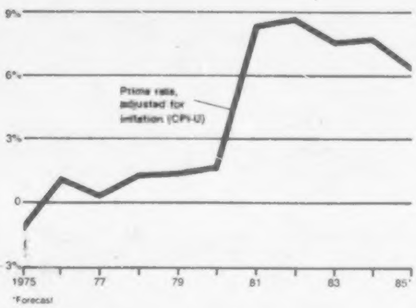
Of course, cheap imports also cost us jobs. More than half the income of farm operator households comes from nonfarm sources, primarily wages and salaries. Industries that provide many of the rural jobs in the Southeast and other areas are very vulnerable to foreign competition.

Where Do We Go From Here?

Adding up all the effects of macroeconomic policy on the farm sector, it's easy to see why many agricultural economists are concerned about the general economy. It is our view that macroeconomic developments are the principal source of the problems farmers face today.

As a society, we may have little difficulty agreeing on general economic goals, such as stimulating growth in the economy and reducing interest rates if we can avoid a new round of inflation. Similarly, few people would object to sharp cuts in the federal deficit if that could be accomplished without raising taxes or trimming programs.

In practice, however, economic decisions involve many tradeoffs and uncertainties. That leaves the future direction of fiscal, monetary, tax, and trade policies open to debate. Whether they participate in the debate or not, farmers have a vital stake in the outcome. ☐



. . . Help Keep Real Interest Rates Up . . .

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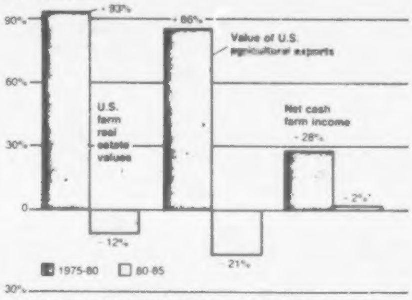

. . . Contributing To Depressed Land Values, Exports, and Farm Income

Based on Feb. 1 or April 1 data for farmland values and fiscal year data for exports. *1985 forecast. Source: Economic Research Service.

THE FARM AND
FOOD SYSTEM
IN TRANSITION

Emerging
Policy Issues

25

FS25

Taxes and Future Food and Fiber System Structure and Performance

Michael Boehlje
Iowa State University

TAXES AND TAX MANAGEMENT affect the choices farmers and agribusiness persons make among varied marketing, financial, and production strategies. The significance of taxes is not overlooked by policymakers, who clearly perceive that changes in tax rules alter the savings and investment behavior of consumers and businesspeople. Evidence of this can be seen in the arguments made to change the U.S. tax code through passage of the Economic Recovery Tax Act of 1981. Our purpose here will be to review the major taxes faced by farmers and agribusiness firms and to discuss the effects of these taxes.

From a policy perspective taxes have four actual and potential effects: (1) they raise revenue, (2) they change the cost of producing various products and thus they may influence the way economic activity is organized as well as its efficiency, (3) they may result in redistribution of income and wealth, and (4) they may influence the resource ownership pattern, and thus the structure, of a sector of the economy. Both the firm level effects and the policy issues of taxation will be reviewed with a focus on: (1) the income tax, (2) the estate tax, (3) labor and employment taxes, (4) property taxes, and (5) sales and excise taxes.

The Income Tax

The U.S. income tax system raised almost 56 percent of federal revenues in fiscal year 1982, with $298 billion being paid by individuals and another $49 billion by corporations. The income tax originated modestly with the Revenue Act of 1913, which imposed a progressively graduated tax on the income of individuals. The rates began at 1 percent on $20,000 of income and reached a maximum of 7 percent at $500,000 of income. Revenue needs of World War I pushed the top rate to more than 70 percent, but exemptions and allowances were so generous that most of the population did not pay any income tax. Since then rates have been substantially reduced and exemptions and allowances have been increased. Income tax is now collected from the earnings of most working Americans.

In addition to the federal income tax, most states also impose an income tax. This tax is usually not as burdensome as the federal tax, but in many states it is not insignificant. In most cases, the structure of the state income tax is similar to that of the federal tax.

The Personal Income Tax

The individual federal income tax is designed to impose a progressive tax on the individual's net income each year. But if gross income and its related expenses can be reported in different tax years, the level of net income which an individual pays tax on during each year can be distorted. Mismatching income and expenses in different tax years defers taxes and it can distort the application of progressive tax rates. Thus many complex rules for reporting income have been developed and most taxpayers must use accrual accounting so as to properly match costs and receipts.

But special income tax rules applicable to agriculture permit farmers to mismatch income and costs, thereby reducing their tax liabilities. Such provisions include: (1) the use of cash accounting, (2) the immediate deduction of some capital expenses, and (3) the capital gains treatment for income from assets for which costs may have been deducted as a current expense. Cash accounting ignores inventories. Thus even though the farmer has an increased inventory, he or she can deduct costs of inputs and control the tax year in which income is realized by the storage of crops and careful timing of sales.

Expenditures incurred in the development of certain farm assets such as trees (other than citrus or almond trees), vines, and livestock herds used for draft, breeding, dairy, and sporting purposes are capital expenditures. However, farmers may deduct the full amount of such expenditures in the year in which they are incurred. These expenditures can be used to reduce or shelter ordinary income from other sources which would otherwise be taxed at regular rates. Then income from the sale of the assets is frequently treated as long-term capital gain with only 40 percent of the income

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Hoy F. Carman, University of California-Davis, and Dorothy A. Comer, University of Florida, contributed reviews of the paper. This is one of a larger set of resource papers sponsored by the Extension Committee on Policy (ECOP), USDA-Extension, Michigan State University Cooperative Extension Service, and the various universities and organizations that supported those who have contributed papers and reviews.

Taken from the series, "The Farm and Food System in Transition," a Cooperative Extension Project.

subject to tax. This is the mechanism for converting ordinary income to capital gains income.

Additional provisions can be used to reduce the tax liabilities of farmers. Expense method depreciation, made available by the Economic Recovery Tax Act of 1981, makes it possible to write off the full purchase price of qualified capital assets in the year of purchase. This write-off is limited to $5,000 of property in 1983 $7,500 in 1984 and 1985, and $10,000 in 1986 and thereafter. The accelerated cost recovery system (ACRS) enables the taxpayer to depreciate capital items over relatively short lives—3 years for automobiles, light trucks, and breeding hogs, and 5 years for other breeding livestock and most farm machinery, and specialized livestock and horticultural structures. Land clearing and soil conservation expenses can be deducted as current expenditures up to a limit. And investment tax credit in the amount of 10 percent of the purchase price of 5 year ACRS assets and 6 percent for 3 year life assets provides a direct credit against the tax liability. The personal tax rates in 1983 (for married taxpayers filing a joint return) range from 11 percent on taxable incomes between $3,400 and $5,500 to 50 percent on incomes in excess of $109,400.

The Corporate Income Tax

The rates of tax on corporate income, whether farm or nonfarm, differ from the rates on the income of individuals. Up to the level of about $8,000 of taxable income individual tax rates are less, but above this level income tax rates for individuals are higher than the rate applicable to the same amounts of taxable income earned by corporations and they remain higher through the entire tax rate schedule. In contrast, long-term capital gains of corporations frequently are not given as large a preference as they are when taxed to individuals. Under a special set of tax provisions for corporations with a limited number of shareholders (the subchapter S provisions), corporate income can be taxed in much the same fashion as the income of a partnership. It is reported by, and taxed to, the shareholders in their personal returns in the same form as it is earned by the corporation.

Even though they have been taxed as corporate income (assuming that subchapter S rules are not elected), net earnings of corporations that are paid out as dividends to individual shareholders are taxed again when the shareholder receives the dividend. This individual income tax on the dividend is frequently called the "second tax" on corporate earnings. This second tax can be avoided if corporate earnings are not paid out but are allowed to build up in the corporation instead. A penalty tax is imposed on excessive accumulations of earnings that are not invested in business assets, but this tax can be avoided by using the accumulated earnings to expand the business. So the tax rules encourage farmers and agribusiness persons to incorporate to save taxes and once they have incorporated, the rules encourage them to expand their businesses.

Operation of a business in corporate form can produce additional tax benefits. Fringe benefits such as group life insurance, housing, health insurance, and pension or profit-sharing plans can be provided to employees (including owner-managers). The costs of these benefits may be deducted by the corporation and usually are not taxed to the recipient employees even though they are also shareholders. In contrast, if these benefits were purchased by individuals operating an unincorporated business, their costs would be either nondeductible or deductible in a smaller amount.

Taxation of Cooperatives

Farm input supply and product merchandising cooperatives receive special treatment under the U.S. tax code. In essence this special treatment allows the income of qualified cooperatives to be subject to single taxation, even though it is distributed to the member-patrons. As noted earlier, in a corporate structure income is taxed as earned by the corporation and then the dividends distributed to the shareholders are taxed a second time. In a qualified cooperative, the distributions to the member-patrons are deductible to the cooperative but they are taxable income to the members. The federal tax statutes do ensure that cooperative earnings will be taxed at either the cooperative or member-patron level.

The historical justification for single taxation of the income of cooperatives compared to the double taxation of corporations is that the cooperative is simply an extension of the farmer's business operations. The cooperative provides goods and services to its members at cost, and it returns any earnings to those who use it in proportion to the amount of business they do with the cooperative rather than to the number of shares they own in it.

Many cooperatives distribute a portion of their earnings to the member-patrons in a noncash form called patron retains. These patron retains provide a mechanism through which the cooperative can accumulate funds for expansion and growth. Regardless of what form the patronage distribution takes, the member must pay income tax on it. To minimize the potential problem of a member being required to pay more income tax on the patronage distribution than he/she receives in cash, cooperatives are required to distribute at least 20 percent of the distribution in a cash form if they want to deduct the entire distribution from the taxable income of the cooperative.

Noncooperative business firms frequently attack the single tax treatment of cooperatives as unfair—they argue that cooperatives do not pay their "fair share" of taxes. Such arguments are substantiated by cooperatives that consistently pay the minimum amount of their distributions in cash, rarely revolve the patron retains to their members, pay no interest on members' equities, are primarily growth and expansion oriented, and have moved into business activities only peripherally related to the business focus of the member-patrons. For those cooperatives that adhere to the concept that they are extensions of the patrons' businesses, single taxation would appear to be justified.

The Estate Tax

The estate tax is a form of wealth tax that is imposed on the total wealth that a person holds at death. Like the income tax, the estate tax is a progressive tax; it is imposed upon the estate of a decedent and calculated as a percentage of it. Because of the graduated rate structure of the estate tax, the percentage of a decedent's estate which must be paid in estate tax increases as the size of the taxable estate increases. Until 1981 the maximum rate for large estates was 70 percent, but by 1985 the maximum rate will be 50 percent and that will be reached at the $2.5 million level of estate value.

Complementing the estate tax is a tax on gifts. It is imposed at the same rate and with many of the same deductions as apply to the estate tax. The gift tax is paid either in the year of the gift or the following year, and gifts bear tax at the full value of the property. The major purpose of the gift tax is to prevent people from avoiding the estate tax through making lifetime transfers. Many states also have inheritance or estate and gift taxes, but their rates are substantially lower than the federal rates.

As they grow older, property owners frequently want to give a part of their property to their families or other prospective heirs. They often find, however, that such gifts can be made only by giving away fractional interests in assets and that gifts of fractional interests are difficult to arrange. In contrast, it is easy to make gifts of corporate stock, and a gift of stock is, in effect, a transfer of a portion of the underlying assets held by the corporation without any change in title to them. Incorporation thus frequently facilitates transfers of partial interests in assets. In addition to this ease of transferring partial interests in the form of corporate stock, the tax burden on gifts of corporate stock may be less than it would be on a gift of the underlying assets. This is because a gift of corporate stock conveying a partial interest in the underlying assets may sometimes be valued at a lower rate for gift tax purposes than the same fractional interest in the underlying assets would be valued. This lower valuation is allowed when the stock reflects a minority interest in the corporation and is called a minority discount.

If farmland is a sufficiently large portion of a farmer's estate, the estate tax can be calculated using a special "use" value for farmland rather than its full market value. This special use value is computed under a formula which reduces values for estate tax purposes to an estimated average of somewhat less than 50 percent. Although the maximum reduction in farmland taxable values allowed is limited to $750,000, this special use valuation technique produces significant savings in estate taxes. Because the estate tax rates are progressive, the tax saving increases as the estate value rises.

In addition, farm and other business estates are entitled to an extended time over which to pay the estate tax. Payments need not start until nearly 6 years after the death and the tax can be paid in 10 equal annual installments. During this time, interest on estate taxes due on the first $1 million of estate value accrues at 4 percent, a rate well below market interest rates or the interest charged on other tax liabilities.

Tax Shelters in Agriculture

Investments taxed under preferential rules, such as the special income and estate tax rules for farmers noted earlier, allow the creation of tax shelters. This tax shelter characteristic affects not only the total financial return from such assets but may also affect the pattern of ownership of such assets. Tax shelters also result in reductions in federal tax revenues that must be offset by revenue increases obtained elsewhere or by government deficits. The revenue losses due to the special farm tax rules of expensing of outlays and capital gains have been estimated for the 1980-82 years as:

Fiscal Year	*Expensing of Outlays*	*Capital Gains*
	(Millions of Dollars)	
1980	430	385
1981	475	405
1982	545	425

Source: Congressional Budget Office, *Tax Expenditures: Current Issues and Five Year Budget Projections for Fiscal Year 1982-86*, Washington, D.C., 1981.

What Is a Tax Shelter?

While theoreticians have argued about the precise definition of a tax shelter, the concept can most easily be grasped by thinking of tax deductions as "assets" having a value equal to the reduction in taxes that they will produce. These "tax system assets" are obtained by reporting the deductions on a tax return and thus eliminating some tax liability. From a tax perspective, income is viewed as a "liability," since a tax will be imposed when it is reported on a tax return. The tax-accounting rules allow the farmer some freedom in choosing the time to report deductions or to report income. Thus farm investors would obtain the largest tax-system asset by reporting deductions as early as possible and against income otherwise taxable at high rates. They would have the smallest tax liability by delaying the reporting of income as long as possible and by reporting it so that it would bear tax at low rates, particularly as long-term capital gains. Proper management of these tax-system assets and liabilities produces a financial benefit that enhances the commercial profits produced by the investment.

Because of the tax shelter potential, high-income individuals in particular have strong incentives to report deductions as early as possible, to delay reporting income as long as possible, and to convert ordinary income to capital gains. The returns from actions taken to mismatch income and costs are directly related to the tax bracket of the investor. A high-bracket taxpayer and a low-bracket taxpayer may earn the same commercial return from a tax-sheltered farm investment, but the after-tax returns will be greater for the high-bracket taxpayer. Because ownership of assets slowly gravitates to those who obtain greater returns and thus can pay the most for them, ownership of tax shelter assets will be concentrated in the hands of the high-bracket taxpayers over the long run. The tax shelter means the most to those with the highest taxable incomes, whether the incomes are produced on the farm or elsewhere.

Because many people recognized the distortions attributable to tax sheltering, tax reform efforts during the 1970's were dedicated primarily to closing "loopholes" and ending the preferences enjoyed by particular groups. Provisions to eliminate the current deductions allowed for capital expenditures were used to stop tax-motivated investments in agricultural crops such as citrus and almonds. At the same time, the tax advantages of breeding livestock were reduced by increasing the holding periods required to qualify for capital gains treatment and recapture of excess depreciation. However, investor interest simply shifted to other agricultural enterprises; grape and walnut acreages increased and cattle-feeding syndicates flourished. The Tax Reform Act of 1976 curtailed the syndication or packaging of agricultural tax shelter investments for sale to nonfarm investors, but individual high-income investors continued to reap tax advantages from agricultural investments.

Impacts of Tax Shelters

Studies of the tax shelter potential in agriculture suggest that tax policy has influenced buying patterns and exerted upward pressure on the price of farmland in particular. This pressure comes about because land provides an ideal tax shelter. The return gained by the appreciation in land value is not taxed until the property is sold. If the land is held until death, this return is exempted. Carrying costs in the form of interest are fully deductible and may offset income from other sources. In essence income taxed at low rates, or perhaps even exempt from tax, is combined with fully deductible costs—thus creating the classic tax shelter.

Under the Tax Reform Act of 1976 farmland became an estate tax shelter as well. As a consequence, farmland has become more attractive to those who can use an estate tax shelter and afford the land. Preferences in the income and estate tax laws have thus created a demand for farmland that would not exist without them. And this demand is most likely to come from those in higher tax brackets who can exploit the tax shelter that land provides.

At the same time, the provisions of both the income tax and the estate tax contain features that restrict the supply of land offered for sale. In the case of the income tax, the exemption from tax of gains on property that passes at death encourages the holding of land until death. In regard to the estate tax, the ownership requirements that must be met to qualify for the estate tax preferences discourage sales both before and after death.

The greater demand for land and the restriction of its supply have kept an upward pressure on the prices of farmland. As the result of tax policy, land is less likely to be sold. Ownership of land is more likely to be perpetuated, to be passed from generation to generation within the same family irrespective of whether the owners are or are not farmers. Such a policy likely encourages absentee ownership. In order to qualify for estate tax benefits the absentee owner is frequently required to participate in some farm management decisions, but he/she need not reside on the land or be responsible for daily management and operations.

The tax shelter aspects of tax law have also encouraged the growth of individual farm firms. The use of cash accounting allows farming to be a tax sheltered industry. So long as there is other income that would be subject to tax except for the tax shelter, taxpayers in higher tax brackets have more funds for growth and expansion than they would if the tax shelter did not exist. Furthermore, however great the advantage of cash accounting, it can be increased if some of the income produced through deductions can be reported as capital gain which is taxed at lower, preferential rates. And the greatest advantage goes to the highest bracket taxpayer. There is also an incentive to combine nonsheltered taxable income (for example, a salary) with sheltered income, since a tax shelter has little benefit if there is no other income to shelter.

Tax policy and the sheltering potential have affected the production and prices of farm commodities as well as management practices. The tax law provides incentives to develop orchard crops and expand dairy operations in spite of surpluses and excess production. Studies have explicitly linked favorable tax treatment to increased production and lower prices in the citrus and almond industries. Culling practices in the hog, beef, and dairy industries are altered in part to take advantage of the favorable taxation of capital gains, and as noted earlier, the cash accounting system affects the product selling and input purchasing decisions of farmers.

Tax provisions also affect the choice of a legal form of business. Frequently lower overall tax rates can be achieved by incorporating the farm. Such lower tax rates provide more after-tax funds and there is a tax incentive to use them to expand the operation. As noted earlier, if the corporate earnings are paid out to shareholders, they will draw a dividend tax. Yet if they are kept at the corporate level without being used in the business, they may draw the penalty tax on accumulated earnings. Both horns of this dilemma can be avoided by using the corporation's earnings to expand the operation. The estate tax preferences noted earlier also encourage continuing a business over many generations and expanding it.

Labor and Employment Taxes

The federal tax system imposes two taxes on wages up to certain maximum amounts. The social security tax is imposed equally on the employer and the employee; it is also imposed on the business profits of the sole proprietor and on partnerships. Contributions for unemployment insurance are exacted from any employer who, in either the current or previous year, employed 10 or more workers at any time in each of 20 or more weeks in the year or paid $20,000 of wages in any one quarter. If neither of these thresholds was reached in the previous year, there is no liability for these taxes in the current year until one of them is reached. However, once the threshold is reached, all wages for the year, including those paid earlier in the year, are subject to the tax. Thus wages paid in October can cause a tax to fall on wages paid earlier in the year. As a result, the marginal cost of wages just over the threshold can, at least in one year, be quite high.

Frequently an employer is also required to contribute to workers' compensation funds. Qualifying criteria and the level of contributions vary from state to state, but they are often quite significant. These levies not only impose financial burdens; they also sometimes require the keeping of records that otherwise would not be maintained. Many farmers and businesspeople may not consider the cost of the tax as onerous as the cost of maintaining such records. Since the record keeping system must be in place for those who may be close to the minimum requirements, it could discourage the use of labor beyond amounts that quite clearly will not result in a liability for tax. Instead, a farmer or businessperson might buy more or larger equipment and substitute it for labor.

An employer who must pay one or more taxes on labor costs may attempt to shift the incidence of the tax by paying lower wages than he/she would pay if there were no liability for labor taxes. If the employer is successful, the employees, in effect, pay the tax because of the reduced wage. Presumably if an employer is successful in making this shift, the market wage rate for labor declines. An employer who is not subject to tax then pays lower wages but also does not pay the tax. Such an employer then continues to have a competitive advantage over the taxed employer. If wages are not so reduced, the producer or agribusinessperson pays whatever part of the tax cannot be passed through to the buyers of farm products. Therefore, the producer or businessperson has an incentive to consider substituting capital for labor that has been made more expensive by taxes.

Such substitution is far from a certainty, however. Increments of capital may be so large in comparison to the additional labor cost that little or no substitution will occur, at least until a large amount of new capital equipment can be added. There is no way of knowing whether or not conditions for substitution occur. Similarly, the real incidence of these taxes on labor costs is not known.

Property Taxation

The property tax is one of the most unpopular taxes in rural communities. Another form of wealth tax, the property tax is a primary source of revenue for local governments. The tax falls heavily on real estate, although in some jurisdictions a property tax is imposed on tangible and intangible property as well. The dominance of real estate in the asset structure of farm production makes the property tax particularly burdensome for farmers.

The accepted incidence of changes in the property tax in agriculture is borne by the landowner—lower property taxes result in more net income and higher property values and higher taxes result in less income and lower values. Higner property taxes increase the cost of owning, thus encouraging more efficient use of land and discouraging the holding of land for speculative purposes. However, around metropolitan areas where farmland values may be influenced by development potential and are consequently much higher than can be justified based on agricultural productivity, property taxes based on market value may also be very high and may result in high costs of production or pressures to sell the land to developers. To reduce the burden of such high taxes, many state and local jurisdictions have implemented "use value" assessment procedures, whereby agricultural land is assessed at its value in current use rather than at its value for future development potential. Such assessment procedures may delay the conversion of agricultural land to urban and development uses and encourage more orderly urban growth and expansion, but if they are indiscriminately applied to land that has no development potential (or consequent price premium), taxes will be lowered on that property and its value will rise.

Property taxes affect individual investment behavior and decisions concerning business expansion and location. Permanent improvements to farm property (i.e. buildings, silos, storage facilities) and plant expansion will typically result in higher property taxes, thus reducing incentives to construct such facilities. Some state and local jurisdictions have low property taxes or will provide tax relief to encourage industries to locate or to construct new facilities in a particular location. One should note that in many cases the tax relief given to encourage the location or expansion of a business shifts additional tax burdens to the other businesses, property owners, or residents. Unless the additional economic activity of the new or expanded business generates other benefits for these surrounding residents, a permanent redistribution of economic costs and benefits may result from property tax relief to encourage increased business activity. This may be a particularly important issue in rural communities where the number of property owners available to share the "tax subsidy" is limited. So the relative size of the property tax burden and the various provisions for tax relief often affect farmers' and agribusinesspeoples' willingness to expand and invest in improvements, and property taxes frequently influence the location decisions of agribusiness firms.

In addition to the complaints about the burden of the property tax, a common criticism is directed toward the inequities in the assessment process. Determining the value of property that has not been subjected to market forces is an inexact science at best, and many jurisdictions allow assessments at values substantially lower than market value. Furthermore, assessors are frequently politically chosen or appointed, and they often have only limited training and little incentive or support to implement the assessment process as completely and accurately as possible. Under such circumstances, inequities in the tax burden and criticisms of the property tax should not be a surprise.

Sales and Excise Taxes

The sales tax is a commonly used source of revenue for state and local governments. This tax is a variation of the consumption tax in that it is applied to the value of products sold. It is collected from consumers by retail firms and remitted to the government. Much of the debate concerning the sales tax relates to its equity features—most analysts argue that it is regressive, requiring those having lower incomes to pay a larger proportion of that income in tax. Because of concerns about this regressivity, some necessities such as food are exempt from sales taxes in many state and local jurisdictions. Excise taxes are another form of consumption tax with a focus on specific products such as tobacco, liquor, or motor fuels. They are typically collected from the user by the manufacturer or distributor.

Sales and excise taxes are typically shifted or "passed through" to the consumer of the product. Thus product prices are increased and the consumption of the taxed product reduced. For agriculture the major impacts of sales or excise taxes are in the tobacco and wine industries where such taxes increase prices and discourage consumption. Different sales or excise taxes on, or exemptions for, various products may also influence prices and purchasing patterns and consequently affect production organization and investment behavior, but the actual impact appears to be quite small. Retail merchants in the agribusiness sector who must collect sales taxes do incur additional accounting and administrative costs in the collection process.

Conclusions

While estimates about the strength of tax policy as a determinant of the course of agriculture are not available, studies completed by the USDA and other organizations conclude that:

- Tax policy has exerted upward pressure on the price of farmland.
- Tax laws have encouraged the expansion of individual farm firms.
- Tax laws appear to impose taxes on labor while allowing tax breaks for capital investments, thus encouraging the substitution of capital for labor.
- Tax shelter aspects of farm tax laws have stimulated the production of tax-sheltered crops.
- Tax laws encourage the incorporation of farm and agribusiness firms.

- The single tax treatment of farm cooperatives is justified for those cooperatives whose activities are a legitimate extension of the business focus of the member-patrons.
- To take advantage of the tax preferences extended to some farming operations, farmers frequently alter management practices.
- Except for reducing the consumption of tobacco and wine products, sales and excise taxes have little impact on the structure, efficiency, or organization of the farm and agribusiness sector.
- Property taxes are capitalized into land values. Tax relief may discourage the sale of farmland for development purposes, but if such relief is indiscriminately applied to farmland with no development potential it will also increase land values.
- Differential rates in property taxes and various forms of tax relief will influence farmers' and agribusinesspeoples' decisions about when to expand and where to locate.

Policymakers will face a number of tax issues in the future. Use of the tax law to provide incentives for changes in economic activity will always be a temptation (for example, to encourage energy conservation, investment in new plants and equipment, or rehabilitation of old buildings). In many cases the longer run and structural impacts of such tax incentives may not be as desirable as the short run espoused impacts.

To analyze and debate future tax policy, we must have a better understanding of the long run efficiency as well as the structural impacts of changes in tax laws. For example, have such provisions as the investment tax credit and the faster deductions under the ACRS depreciation rules encouraged the adoption of more efficient production methods, or have they encouraged over-expansion and capital intensive investments using debt capital? Is the availability of the cash accounting system in the best long run interest of farmers? Should nonfarmers be able to use farm losses to shelter income from other sources? What are the consequences of property tax relief and reduced farmland assessments for land use and real estate prices? Should cooperatives maintain their unique tax status? Are further reductions in tax rates desirable? Would agriculture fare better under a flat tax rather than the current progressive tax rate structure? What implications does a value added tax or a tax on consumption rather than on income have for farmers and agribusinesspeople? These and other issues will comprise tax policy agenda in the future.

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FOOD AND AGRICULTURE POLICIES: Proposals for Change

Report of Study Group

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February 1985

Introduction

The involvement of the federal government in food and agriculture is pervasive. That presence has grown markedly since the Depression days of the 1930s when the farm price and income support programs were first instituted. Many of those programs, little changed in structure, remain today, periodically renewed by the so-called "farm bills." Over the years, other major programs have been added. The Food for Peace Program (PL 480) was begun in 1954 and is now the principal international food assistance mechanism as well as a foreign economic development tool. The Food Stamp Program originated in the late 1930s. It was revived in the early 1960s and authorized on a large scale in 1964. Other feeding programs, such as the Women-Infants-Children (WIC), School Breakfast and Lunch and Special Milk Programs, among others, were developed to meet specific needs. In addition, myriad other farm, regulatory, credit, and science and education programs serve a variety of constituencies. In fiscal 1984, total expenditures for all of these programs approached $40 billion.

In recent years, many of these programs have come under increasing scrutiny due to fundamental changes in the structure of farming; growing participation in world markets; the wide and growing disparity in incomes between developed and developing nations; and for all the programs, issues as to their effectiveness in relation to growth in size and cost, among others. This project examined the current nature of the food and agriculture system and the economic environment in which it operates, the international programs in relation to domestic agriculture, and the domestic food assistance programs. This paper presents a brief summary and the conclusions of that effort.

The Uniqueness of Agriculture

The farm sector has long been treated differently from other sectors of the economy. This derives in part from the important role of agriculture in the overall economic development of the nation. As recently as the 1930s, fully one-fourth of the American population still resided on farms. The New Deal programs of the time were a response to the urgent economic need of a large segment of the population. The incomes of farm households then averaged scarcely two-fifths of those of nonfarm people, and there were far fewer services available to rural people than to urban residents.

The special treatment accorded agriculture also relates to the nature of the production process. Because of its length and segmentation, it cannot be controlled in the short run in the same way as industrial processes, and the output becomes available at one time. Moreover, unlike many other industries, the process is vulnerable to the vagaries of nature—weather, diseases, and pests. To this inherent risk, the growing dependence on export markets in recent years has brought additional potential instability. Because of our relatively open economy, the impact of any change in global weather, economic conditions, or policy shifts by importing and exporting nations that affect production and consumption is rapidly reflected in our agricultural product markets.

At the same time, the agricultural sector has lost much of its uniqueness. The farm population today is but 2.4 percent of the total, the chronic disparity between farm and nonfarm incomes is gone, and rural people enjoy most of the services available in urban areas. Natural production risks remain, but federal crop insurance now is widely available to augment private insurance, and marketing risks can be managed better by use of the commodity futures markets. Even so, the sector remains vulnerable to wide swings that bring economic distress throughout the system. This is illustrated by the last decade—from a boom in the early 1970s to prolonged recession in the early 1980s, responsible for much of the distress in the sector today.

Currently, the farm sector is in a period of transition, during which its structure and operations are making major adjustments to a world market environment. Some further consolidation of farms will occur as a result of both short-term pressures and long-term trends. The pace and extent of adjustment must be as much a concern of public policy as are other issues we confront in becoming a participant in a competitive world economy.

There are still numerous rural communities which depend for their economic well-being on the existence of moderate-scale agriculture. Further, there is intrinsic value to the maintenance of a reasonably large number of farms, as long as they are fundamentally competitive.

While agriculture today is far different from 50 years ago, we believe it should continue to be treated as "special" because of its singular importance to the overall well-being of the country and the many variables which affect it which do not necessarily affect other sectors of the economy. However, we believe that both for agriculture's own well-being and that of the general economy, policy changes should be implemented which would lead to greater stability for American agriculture operating in world markets, with continued overall growth in productivity, efficiency, and competitiveness as the ultimate objectives.

The Effect of National Economic Policy

Changes in U.S. food and agriculture policy are the primary focus of this report. But any changes in food and agriculture policy are and will be overwhelmingly outweighed in importance—even to the farm sector—by macroeconomic policies implemented by U.S. national administrations. Unless current and projected federal budget deficits are sharply reduced; unless present interest rates are brought downward; unless the artificially strong dollar is brought into more normal alignment with other currencies; unless tax, spending, and monetary policies are made more coherent, American agriculture will not be healthy and internationally competitive. Macropolicy changes should be made now which will help create an environment for stable, noninflationary growth both in agriculture and in the United States as a whole.

Agriculture Policies

U.S. agriculture requires a new set of policies, to reflect the tremendous changes that have occurred in agriculture itself, its markets, and the overall economic environment. We believe particularly that the role of government should be to facilitate adjustment to dynamic domestic and global market forces. It should not be either to fully insulate producers against risk, or to leave them totally unprotected against extreme volatility.

We recognize that a confluence of many forces has led to consolidation of farms and a growing concentration of production. Yet, the small and medium-sized farms have in many ways been the backbone of American society over many generations. We believe that such farms, those who live on them, and those in the rural economy who serve and depend on them are an invaluable part of this country. We do not believe, however, that policies devoted to the overall efficiency and productivity of U.S. agriculture will adequately address the needs of these farms, businesses, towns, and people. Instead, we believe that special attention is required to the problem of giving moderate-scale agriculture a reasonable chance to survive the pressures it is now under.

International Food Assistance

Our international food assistance programs have shared the bounty of American agriculture with millions throughout the world who otherwise would have fallen victim to hunger. Since the inception of these programs, however, vast changes have taken place in both the U.S. farm economy and in the outside world. Increasingly, beyond the immediate and crucial issue of providing aid to the victims of famine, the long-term interest of the United States, and rich and poor nations alike, is best served by a strategy which to the maximum degree possible encourages agricultural self-reliance for those nations now unable to feed their people adequately. This implies a new U.S. strategy and policy far more sophisticated than those of the past.

Domestic Food Assistance

Just as we require new approaches to ameliorating international hunger, we require a renewed commitment to assure that hunger is defeated in America. We believe that every person in the United States should have access through some means to a nutritious diet on a daily basis. We should demand no less of ourselves as a nation. We believe the present efforts toward such a goal are inadequate. We propose a number of amendments to federal hunger programs which would work within the existing framework but which would reinforce and strengthen the effectiveness of those programs.

Discussion and Recommendations

Food and Agriculture Should Be Treated As Special

Agriculture policy in the United States, as in many other countries, has long been developed on the assumption that agriculture was fundamentally different from other industries, and that it required more government attention to ensure its overall welfare and performance.

Among the important differences which historically determined our national policies, several still are valid today.

Food is perhaps *the* essential commodity. Without a strong and diverse agricultural production capacity, national security in the broad sense and national economic security as well are both subject, potentially, to the actions and intentions of other countries, and to sharp and intense negative impacts due to "natural" economic forces. The "promotion of the general welfare" requires specific attention to ensuring a reliable, moderate-cost supply of food on the American market.

Further, now that we participate in world agricultural markets, the "general welfare" of many nations depends on our farmers, the industries which support them, and on the overall stability and responsiveness of our agriculture sector.

Rural life in America, so important to the character as well as the history of our nation, is changing. It is less "farm" dependent than it once was, and proportionally fewer Americans live in rural settings. Nonetheless, the structure of many rural communities and local economies remains based in agriculture, and much that is best in American society remains rooted in rural communities and the way of life and work which they represent. The preservation of the fundamental structure of rural communities remains an important concern of national social policy as well as of state and local policy.

Although less devastating to many individual producers than they once were, seasonal ups and downs relating to weather, pests, and other natural forces still affect agriculture. Interaction of sudden, short-run shifts either in supply or demand immediately affect price and can result in overwhelming difficulties for farm enterprises, difficulties of a nature and degree which rarely confront firms in the rest of the economy.

Many analysts believe that the increasing integration of the U.S. agriculture sector with the world market has increased the potential volatility faced by U.S. producers and the entire food system. In addition to the many devices for managing instability which are available through the private sector, there is a role for government programs in helping to ameliorate this volatility.

Need for a Sound Macroeconomic Policy

Much of U.S. agriculture now is significantly dependent on a world market. As recently as 1970, our exports were only $7.3 billion, 14.4 percent of farm cash receipts. But, shortly thereafter, exports rose substantially and set value and volume records throughout the 1970s. The peak occurred in 1981 at just over $43 billion, with exports accounting for 30.4 percent of farm cash receipts. The output of nearly four out of every ten cropland acres today is destined for foreign markets.

The export performance of the agriculture industry is especially notable in the nation's trade situation. Farm exports provide the largest positive contribution of any industry to our trade balance. These exports not only generate needed foreign exchange, but stimulate economic growth and employment as well. Every dollar of agricultural exports generates even more in *additional* economic activity, most of which accrues to the nonfarm sectors. Over one million full time jobs depend on agricultural exports, about one-half in farm work and one-half in food processing and transport.

Two important and related results of current macroeconomic policy are high real interest rates and an abnormally strong dollar relative to most other currencies. Both have important influences on the farm economy and on the economies of our trading partners.

In the situation currently confronting the U.S. economy, the strength of the dollar in relation to other currencies has put in jeopardy one of our most highly competitive export industries. From the beginning of 1980 to the end of 1984, the real trade-weighted value of the dollar for agricultural products rose 45.6 percent, effectively raising prices of our products by this amount.[1] This, along with the worldwide slump in food demand caused by continued sluggishness in the world economy, has resulted in a decline of U.S. exports between 1981 and 1983 of $9.0 billion, 20.5 percent. Export volume fell 10.8 percent over those two years, and was even lower in 1984.

While the strong dollar affects farmers' sales and revenues, extremely high real interest rates are affecting the cost side and especially so for some farmers. High interest costs are particularly burdensome to farms where the indebtedness is most concentrated. The biggest problems face those who during the 1970s took the most advantage of the opportunities offered and borrowed money to invest in more land and/or machinery.

Agriculture has become highly capital intensive in the post-war period and much more heavily reliant on debt capital. The debt of the sector increased $113 billion in the 1970s, and the debt-to-asset ratio of the average farm today is twice as large as it was 30 years ago. While the ratio for the sector has increased to 20.8 percent, it is much higher for the larger farms—greater than 70 percent for many—those which have a substantial portion of the sector's total debt. The structure of that debt also has changed over time. Debt today has a much shorter maturity. Much of the real estate debt maturities have moved from the typical 20 to 25 years of two decades ago to 10 to 15 years or less today, and much is on variable interest rate mortgages.

Interest costs thus are a major component of farm production expenses and high real interest rates strongly contribute to the economic difficulties of the sector today. Rates of rural bank failure are higher now than they were at the peak of the recession in 1981-82. And the effects of bankruptcy are not confined to farmers and bankers.

The general health of the world economy, in both the industrialized and nonindustrialized nations—and especially in those countries in the process of moving toward industrialization—depends in large part on a return to balanced and harmonious tax, fiscal, and monetary policies in the United States.

Most economists, and many business and labor leaders, as well as representatives of farm and agribusiness interests, agree that a significant reduction in the federal deficit is necessary to restore the U.S. economy to a balanced growth path. And because of the importance of the U.S. economy to the world economy, action on the federal deficit now is essential to many other nations' abilities to conduct sensible macroeconomic policies of their own.

While agriculture is adversely affected by the deficits, it is in some sense a contributor to them. Treasury costs of the farm programs in FYs 1981-84 averaged $10.2 billion, over three times the average annual costs for the 1970s. In FY 1983 alone, the massive acreage reduction (the Payment-in-Kind program) boosted Treasury costs to over $28 billion, about 15 percent of the federal deficit in that year.

Agriculture thus would not only benefit from a macroeconomic policy that reduces deficits; its return to health would contribute to reduced overall federal spending.

U.S. Agriculture Requires New Policies

Three major changes have occurred in American agriculture during the post-World War II period, each having a significant impact on the nature of the sector and the way it operates in the American economy.

Steady, strong increases in productivity have taken place. Since 1940, both average crop yields and overall productivity have more than doubled. These increases, based on technological and organizational developments contributed by both the private and public sectors, have brought massive changes in the business of farming. The mix of farm production inputs has changed and off-farm inputs—fertilizer, seeds, chemicals, and equipment—have replaced many of the on-farm inputs of earlier eras, including much labor. The labor requirement for agriculture has fallen 72 percent over this period. Economies of size related to capital equipment and to infrastructure, e.g., irrigation and marketing arrangements, have driven consolidations in farm enterprises and have turned the typical farm operator into the manager of a diverse and complex set of processes. The use of credit has become much more important in annual operations, as have the prices which the farmer pays for industrial inputs.

Increases in productivity, combined with growing world demand and realignment of exchange rates, *brought U.S. agriculture into the world market in the 1970s.* Increasing standards of living in other nations created greater food demand abroad, and the U.S. benefitted from the comparative advantage of its sophisticated production and distribution technologies. Between 1971 and 1980, world trade in agricultural products grew rapidly, from $55 billion (export basis) to $233 billion, but subsequently declined with the onset of the global recession. An increasing share of agricultural production, particularly of grains and oilseeds, is traded in world markets. Over 9 percent of world grain production and 35 percent of oilseed production was traded in world markets in 1980-82, compared to 5 percent of grains and 25 percent of oilseeds traded in 1969-71.[2]

Many countries have become more dependent upon grain imports, particularly the Soviet Union, the oil exporting nations of the Middle East, the rapidly developing countries of East Asia, and food-deficit developing countries in Sub-Saharan Africa. The United States has emerged as the major supplier of many commodities, providing 71 percent of the grains and 60 percent of the oilseeds traded in world markets in 1980-82 (Table 1).

Changes in technology and organization which increased productivity and which permitted growing participation in world trade, also *changed the structure of the farm sector, food products, and the relationship among enterprises in the food and agriculture sector.*

We have evolved from a nation in which some 32 million individuals lived and worked on farms in 1920 to one in which the farm population is only 5.6 million. Yet, the total employment in food and agriculture is over 24 million, mostly *not* on farms, but in some other parts of the agriculture, food production and distribution industries. This change reflects a different pattern of participation by individuals in the work of the sector.

Overall, the combined food and fiber system—farming plus the farm supply and food processing and retailing industries—is one of the largest sectors of the economy. In 1982, it generated over 20 percent of the Gross National Product (GNP) and employed over 24 million full-time workers, 21.5 percent of the nation's labor force. Of the total, farming itself accounted for 11 percent of the system's GNP contribution; the industries which supply farm inputs (machinery, fertilizers, pesticides, and farm services) accounted for 28 percent; food and textile manufacturers 22 percent; and food transporters, grocery stores, and restaurants 39 percent.

Within the farm sector, the pattern of relative income distribution also is much different from that which prevailed over much of the first half of this century. The income of all farmers, *on average*, is now very similar to the average income of persons reliant on all other activities in the economy. The business environment which confronts these key participants in the farm economy is, in at least some important respects, not all that different from the business picture which faces the retailer, the small manufacturer, or the service provider.

Table 1:
Proportion of Commodities Exported

Commodity	1981-82 Average Proportion Exported (percent)	Acreage Equivalent (million acres)
Wheat	58.6	46.8
Cotton	46.6	5.0
Rice	44.9	1.6
Soybeans	43.4	29.5
Corn	23.0	17.1
Coarse Grains	22.1	24.1

As nonfarm job opportunities have developed in rural areas, farm families have earned an increasing share of their income off the farm. When the nonfarm income of farm people first was reported, it was 40 percent of their total family income. That proportion has grown to over 60 percent in recent years (Table 2). Nonfarm earnings are particularly important to the smaller farms and become less important as farm size increases. Off-farm income has contributed to a much more equal distribution of total income among farm families, and narrowing of the farm-nonfarm income disparity.

Perhaps the most significant change in the farm sector has been its evolving structure, now one in which there are three distinct groups of farms. There are a large number of farms which account for a small proportion of aggregate farm output, and a relatively small number of commercial farms that produce the bulk of the food and fiber (Table 3). The latter group is in turn composed of a few extremely large farms, and a larger number of moderate-sized farms.

Some of our domestic farm programs were designed long ago to ensure that individuals and families in farm communities shared fairly in the American economy. Other programs were developed to introduce a level of short-run stability into the sector for the protection of small, price-taking enterprises without the scale to hedge themselves against instability in prices, or poor crops due to factors

Table 2:
Off-Farm Income as a Percentage of Total Income

Farm Size	1960-64 (percent)	1980-83 (percent)
Gross Sales		
Less than $5,000	68	103[1]
$5,000-9,999	40	103[1]
$10,000-19,999	24	102[1]
$20,000-39,999	19	90
$40,000-$99,999	15	59
$100,000-$199,999	15	33
$200,000-$499,999	15	19
$500,000 and over	15	4
All Farms	47	61

NA = Not available

1. Exceeds 100 because average farm income is negative for these size groups.

Source: Calculated from data from *Economic Indicators of the Farm Sector: Income and Balance Sheet Statistics, 1983*, ECIFS 3-3, Economic Research Service, USDA, September 1984.

outside their control. Many observers believe that the structure of these programs, in the current world in which fairly large agricultural enterprises compete in an international market, are too inflexible and in some cases no longer appropriate at all.

The programs for the major crops support the price of farm products using commodity loans and voluntary acreage reduction programs, and provide additional farm income support through direct payments. The Commodity Credit Corporation (CCC) makes "nonrecourse"[3] loans to farmers, with the commodity produced as the sole collateral on the loan. This ensures that farmers can receive at least the loan rate for their crops, since they have the option to forfeit the commodity to the CCC in lieu of repayment. To avoid excessive production, farmers may be required to reduce their acreage to receive program benefits or may be paid to divert land from production, as in the Payment-in-Kind program in 1983.

The "target price/deficiency payment" system provides income support above the market returns received by farmers. Deficiency payments are made to farmers based upon the difference between the target price and the market price of the commodity. When target prices are significantly higher than market prices, as they were for several commodities in recent years, the payments contribute to overproduction and high budget costs.

While the target price program can contribute to overproduction, it does not directly interfere with the price of commodities, in contrast to commodity loan rates. When loan rates are above prevailing world prices, the competitiveness of our products in those markets is reduced. Export revenue is reduced in the long run, and agriculture is prevented from fulfilling its potential as a trading sector. When production restraints (set-asides and diversions) are used to boost domestic prices, the result is much the same. Foreign producers expand production for export, and markets for U.S. products are lost.

Over time, the benefits of the programs have tended to become capitalized into land values, increasing the owners' wealth at the time. However, high-value land acquired by borrowing carries costs in future years which cannot be supported if the commodity prices which initially justified them begin to drop. It is the prospect of falling land values and reduced returns on past capital investment that makes reductions in price and income supports difficult, even when those supports are recognized as counterproductive. However, inducing the needed resource adjustments may involve capital losses; this argues for easing any adjustment over a transition period.

The *cost* of the current programs to the U.S. taxpayer and, in some cases, to the U.S. consumer, increasingly has come into question. The *benefits* of the programs also are increasingly under question, since the result of the past few years has been the shoring up of U.S. prices, large payments to very large-scale producers, and reduced competitiveness of some products in the world market.

As agricultural production has expanded to meet export needs, concern has been growing over the long-term sustainability of the natural resource base. Soil erosion problems are serious and water supplies are becoming increasingly scarce in some areas. While these problems are far from crisis proportions, there nevertheless are serious concerns for the long run. Even though there are government programs to address these concerns, there is ample evidence that their effectiveness is diluted or overwhelmed from being at cross-purposes with other programs (e.g., price supports encouraging cropping on marginal land). Beyond this, there is growing awareness of the hidden costs of known problems—stream sedimentation from erosion, water pollution, etc.

Table 3:
Characteristics of Large, Medium, and Small Farms (1983)

Item	Large Farms (Over $200,000 Gross Sales)	Medium Farms ($40,000 to $200,000 Gross Sales)	Small Farms (Under $40,000 Gross Sales)
Number	107,000	558,000	1,705,000
Percent of All Farms	4	24	72
Percent of Total Output	48	39	13
Percent of Net Farm Income Earned	67	32	1
Average Assets Per Farm	$2,295,000	$806,000	$197,000
Percent of All Farm Assets	24	43	33
Average Net Worth	$1,561,000	$642,000	$171,000
Average Family Income	$191,869	$27,185	$19,435
Percent of All Off-Farm Income Earned by the Farm Sector	4	16	80

Source: USDA.

Policy Options: Overview

If it is granted that current farm programs no longer effectively serve the purposes for which they were intended, there are several alternative directions which might be considered.

First, federal intervention in commodity markets could be terminated. It is argued that this would leave the farm operator in much the same position as the general small business operator, functioning as an entrepreneur in a regulated but not controlled environment.

Proponents of such a "free market" for agriculture argue that it is necessary to allow the market to determine prices if the United States is to remain competitive in world markets and to employ its agricultural resources efficiently. They argue that if farmers need income assistance, it should be provided directly through income transfer programs, rather than by price support programs for all producers of a commodity, with benefits based on the volume of sales. While acknowledging that instability is a serious problem, proponents of a "free market" agriculture argue that risk management mechanisms such as Federal Crop Insurance, forward contracting, and futures markets offer effective means for farmers to manage their risks at little cost to taxpayers and consumers.

Proponents argue that the long-run advantages of a "free market" could be significant: resource use would adjust to the market rather than being impeded by farm programs; government costs would be much lower; and consumers would pay less for most food products.

We believe that moving toward a greater worldwide reliance upon market forces is a worthwhile long-term goal for agricultural policy. However, we do not feel that complete and abrupt termination of U.S. farm programs is practical or desirable. Immediate elimination of U.S. farm programs would create substantial economic dislocation. Most producers of commodities now dependent on government programs would suffer capital losses, and significantly greater numbers of farmers would be forced out of business. Farm asset values, which in part reflect the capitalized value of government programs, would decline sharply, greatly exacerbating an already serious financial situation for many in farming. This would further strain the banking system, farm supply industries would face further declines, and rural businesses would be adversely affected. Moreover, there is an appropriate role for the government in ameliorating the extremely large economic swings which affect the entire agriculture and food economy.

Second, regulation of the farm sector could be made more restrictive and more effective with mandatory supply controls and largely administered prices. This would treat the sector substantially as a public utility. Government (or producers) could regulate the volume of production of certain commodities in order to establish and maintain somewhat higher prices for producers. When such prices rose above world levels, import controls would be required to protect the price support program, and export subsidies would be available, as a matter of policy, to maintain some historic world market share for the United States.

Proponents argue that this approach would remove much of the instability facing farmers, would ensure them of a fair return, and would reduce government costs without unduly raising food prices. Since price support payments would be eliminated and surpluses avoided, government costs would be minimal.

We agree that tight controls with higher price supports could raise the price of farm products. However, we do not believe that this inward-looking approach is the right strategy for U.S. agriculture today. It would adversely affect the terms of our access to foreign markets, impede adjustment for efficiency gains, and result in higher food prices. Economic growth in the food sector would be slowed and the agricultural economy would falter if exports declined.

The numerous problems inherent in strict supply control programs led to their abandonment for most commodities in the 1960s. Now, with our much greater dependence upon foreign markets and with a general trend toward deregulation, this approach appears even less desirable.

A Recommended Option

We believe that a third approach would be the best.

The time has come to forge new objectives and a new policy approach out of present law. The primary focus of this policy would be growth and stability in the food and agriculture economy, reasonable food prices, transition to a more world market-responsive sector, and assistance to farm people who need help during this transition. Implementation of this approach will take time, and it will require change in the structure and operation of farm programs.

This approach, we believe, is less likely to worsen significantly the financial crisis many farmers face, and is also less likely to restrict exports or increase government involvement than a program of strict supply controls and higher price support levels. While it would face up to the basic contradictions inherent in present agricultural policies only over a long time span, it would be designed to deal with the fundamental problems of excess government costs, declining exports, and inadequate farm incomes over the next several years.

The specific proposals described below provide the framework for this new approach. They modify the structure of current farm programs, to increase their flexibility and effectiveness in a world market environment; gear the direct benefits increasingly to small and mid-size farms whose operators are primarily dependent on farming for their family income[4]; and permit a more market-responsive program as rural economic conditions improve.

This should not be mistaken as a projection of the status quo. Mounting evidence of inequitable distribution of benefits and adverse side effects—including economic dislocations throughout the food economy caused by large acreage diversion programs such as PIK and unwise use of resources encouraged by target price payments—make superficial amendments to present programs unacceptable.

This transitional approach would:

- revise U.S. trade policies relating to agriculture, to focus them on promoting stable growth in world production and consumption, on maintaining appropriate U.S. participation in world agricultural trade, and on achieving multilateral reductions of trade impediments;

- modify price and income stabilization programs, to reflect the requirements of international marketing;
- give renewed emphasis to long-term conservation objectives;
- amend short-term acreage reduction programs so that they effectively achieve temporary supply limitation objectives;
- restructure the Farmer-Owned Grain Reserve, so that it functions as a buffer stock; and
- institute a temporary new program of farm credit assistance, to deal with the crisis in farm debt in a businesslike manner.

Given the history of federal involvement in this sector, and considering the impact on individuals and communities that fundamental changes are likely to have, we favor these steps as the right approach to farm program reform in 1985.

Meeting the Requirements of the International Marketplace

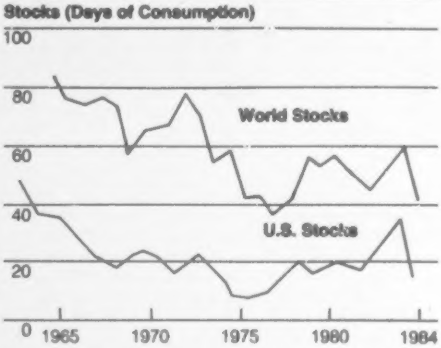
U.S. trade policies should focus on two objectives for agriculture. One is achieving reasonable medium-term stability in world agricultural trade, and appropriate U.S. participation in that trade and in its growth. The other is a greater acceptance by all nations of more open market policies.

As international trade in agricultural products has become more important, importers and exporters alike have become more susceptible to the natural instability of agricultural markets. Supply variability often has been magnified by the policies of governments as well. Decisions made by the Soviet Union to import grain, and the Common Agricultural Policy of the EC which in many cases shields the Community's producers from world market price fluctuations, increase instability in the rest of the market. The United States often has played the major role in dampening this instability by adjusting stocks and production capacity in response to market conditions, acting in effect as the "shock absorber" for the world market. In 1983, before the Payment-in-Kind program and the drought substantially reduced U.S. grain stocks, the United States held 56 percent of the known grain reserves in the world. In fact, most of the adjustment in world grain stocks in the past decade has been made by the United States (Chart 1).

This role of the United States has benefitted producers and consumers both here and in many other nations by helping to stabilize agricultural supplies and prices. At the same time, the United States alone has borne the cost of carrying stocks and adjusting its production capacity, sometimes at the expense of losing foreign markets to competitors.

From the perspective of the United States, an international system of national reserve-carrying policies which would relieve the United States of its disproportionate cost burden would be desirable. Following the World Food Conference in 1974, determined efforts were made to negotiate an internationally coordinated grain reserve. These efforts proved unsuccessful, and were finally suspended in 1979. In the present situation, with the United States and the EC fighting over trade subsidies, financial constraints in many developing countries, and little interest on the part of other nations, development of an international grain reserve agreement appears remote.

Chart 1:
Total Reserves of Grain



Source: Calculated from data from *World Agricultural Supply and Demand Estimates*, World Agricultural Outlook Board, USDA, various issues.

In this environment, it would seem to be a reasonable objective of U.S. policy to seek a stabilized share of world trade in agricultural goods, while maintaining our reserve of grains.

Such an objective might be supported by a program which includes:

- *a more focused export credit strategy*, directing either existing or new programs toward countries which face severe debt service and foreign exchange constraints, or one that would be used only to partially offset changes in the value of the dollar to contain losses of market share. Such a strategy would be less disruptive than an across-the-board export subsidy strategy, which carries the risk of triggering a trade war with competing exporters. A trade war would prove very costly and likely unsuccessful for the United States, which has much more to lose than its competitors.
- *a strengthened program to promote the reliability of U.S. supplies*, not only in quantity but also in quality; government export inspection programs need to be significantly improved. Further, in general, the government should take an active role in helping private industry assure satisfied customers.
- *increased funding of multilateral programs (e.g., the IMF Food Facility) which assist poor nations with short-term food import financing*. Increased funding of such programs could contribute to food security in developing countries and stabilize short-run trade flows.

- *negotiation of bilateral trade policy agreements which include procedures for joint dismantling of barriers, reduction of subsidies, and stabilization of production levels.* It has proven to be highly difficult to negotiate reductions in trade barriers through the framework of GATT, and the prospects for progress soon are not promising. Bilateral trade negotiations, conducted first with the EC and other OECD countries, but eventually expanded to non-OECD countries as well, might offer a means of reducing the trade tension with the EC or Japan in a forum uncluttered by the difficulties of multilateral negotiations. If bilateral adjustments are achieved between the United States and EC, it may prove easier to negotiate with other nations. There is a risk, however, that a U.S. attempt to negotiate bilateral trade agreements could undercut past U.S. support for multilateral trade agreements and contribute to a proliferation of restrictive bilateral agreements at the expense of freer world trade. It thus is advisable to view this approach cautiously, treating it as a device possibly useful to help break the deadlock in multilateral negotiations of agricultural trade barriers.
- *continued use, where appropriate, of bilateral long-term trade agreements (LTAs), particularly with centrally planned economies.* To the extent that these agreements help centrally planned economies adopt a more predictable buying pattern, world market stability may be enhanced. As with other forms of bilateral negotiations, such agreements should be used cautiously, because of the danger that proliferation could lead to a more restricted and unstable world market.
- *continued international discussion of development of coordinated national grain reserves.* While progress will likely be slow, consistent support by the United States would keep alive the idea of a system which would be of mutual long-run benefit to trading nations. Without the support of the United States, which probably has more to gain than anyone else from cooperation, such efforts are certain to fail.

Revising U.S. Farm Programs to Meet New Objectives

The committee believes that Congress should focus on achieving a mix of *medium-term farm policies* to help farm and rural people adjust to new conditions, ensure stable food prices, facilitate exports, reduce federal program expenditures, and conserve resources for future generations. We do not advocate establishing a whole new set of programs, but rather an evolution toward a revised system of limited but more effective farm programs. We believe this will lead to a farm sector more responsive to a world market, while providing some protection for farmers and agribusiness against the extreme economic cycles common to agriculture. The purpose is not to manage each farmer's individual risk, but to help ameliorate the larger swings over which individual producers have little control and which threaten the health of the food system and of the American economy.

This approach includes:

- adjustment of commodity loans (over a four or five-year period) to meet international competition; and modification the target price program to limit farm program costs in a manner consistent with savings achieved in nonfarm spending, as part of an overall program of reducing the federal deficit;
- for the longer term, enactment of a conservation land reserve program, converting use of our most highly erodible cropland to less intensive uses, such as pasture, hay, or forest;
- continuation of short-term production adjustment authority with changes necessary to insure effectiveness;
- modification of the Farmer-Owned Grain Reserve to ensure adequate inventory, to keep the United States a reliable supplier and to serve as part of a world buffer stock;
- development of transition programs to shift our more regulated commodities (dairy, sugar, peanuts, tobacco, etc.) to a market-oriented approach over a 6- to 8-year period;
- targeting special assistance to small and mid-size family farms which depend on income from farming; and
- development of a special credit assistance program to help farmers through the extreme financial crisis that now grips many parts of U.S. agriculture.

A number of programs related to agriculture which provide significant benefits to the nation as a whole should be continued, including general agriculture and nutrition research, and the development and promotion of techniques aimed at protecting our soil and water resources.

Modifying Price and Income Supports

Loans. The nonrecourse price support loan has been a mainstay of U.S. farm programs almost from their inception. Its purpose is to provide a price floor guaranteed by the Commodity Credit Corporation, acting as a market of last resort for all eligible production. Whenever these floor prices have been set above market-clearing levels, the government has become the reluctant owner, and U.S. products have been made uncompetitive in world trade. Sometimes, especially in recent years, these floor prices also created incentives to foreign competitors to expand their production in order to tap markets primarily held by the United States.

Supporting farm prices above world values in the long run is not a tenable approach for the 1980s, when we must compete in world markets. The price support loan thus must be returned to its original and legitimate role of helping farmers market their products more evenly through the year and thus receive better average prices. This will minimize storage and interest costs, limit the acquisition of unwanted commodities by the CCC, and reduce the administrative costs of these very complex programs.

The economic rationale for a publicly operated price stabilizing loan program is not as strong as in the past. We do not want loan rates which interfere continuously with market prices and we now have other instruments such as options and futures markets which play a role in price stabilization.

Thus, we recommend:

- modifying the loan program in the direction of reducing the accumulation of government-owned surplus stock: by instituting some form of price averaging, by application of language now in the law permitting reduction of the loan level when market prices have been low, or by means of other, innovative modifications such as those currently under discussion among some farm organizations;

- moving, as a next step, fully to eliminate any possibility that loan rates become out of line with long-term world equilibrium prices and result in acquisition of surplus stocks by the CCC; and
- taking steps to ensure that options and futures markets are readily available to farmers, and assisting in their use if necessary.

Target Prices. There is no justification for providing income support through target price, or "deficiency," payments which become an incentive to all producers of the major crops to expand their output.

These payments as now administered promote surplus production when supplies are already excessive. We recommend that the present target price program be amended in major ways, first to direct the benefits to small and mid-sized farms, many still owned and family-operated, which hang in the balance these next five years; and, second, to reduce the target price guarantee as may be necessary over time to contain overall budget costs in the context of a general program of federal budget deficit reduction.

There is merit in efforts that facilitate the adjustment some operators of small and mid-size farms must make—to securing additional resources to enable a viable sized farm business; to organization of self-help programs; to finding off-farm sources of income to supplement farm earnings; or, for some, to giving up the enterprise altogether. A specific, focused program limited to small and mid-sized farms (up to perhaps $200,000 per year in gross sales, and only those whose owner-operators are primarily dependent on farm income) should include some combination of the following alternatives:

- continuation for a time of the target price/deficiency payment program;
- special subsidized and supervised credit programs via federal agencies and private lenders;
- development of an income insurance program to cover price as well as yield risk, with subsidized premiums; or
- individual farmer accounts, patterned after individual retirement accounts, allowing farmers tax deductions or tax credits for contributions to an account which would be usable during low income years.

Conserving Land Resources

There are two aspects to public policy involving the nation's agricultural land resources. One relates to the management or conservation of this resource for a sustained production capacity to allow future generations to enjoy the same food security we now enjoy. The second is the need for *temporary* adjustment from time to time in the nation's production capacity.

The best available evidence suggests that today some 32 million acres of land are intensively cropped although they are unsuited to such use—the soil loss through erosion is greater than can be sustained over the long run. The long-term preservation of this land for agricultural purposes necessitates that it be used less intensively. But, the short-term economic interest of the farmer precludes shifts to less profitable uses or capital investment in conservation measures. This would suggest that societal interests are best served by providing more effective incentives for soil conservation. Therefore, it is recommended that a national long-term land conservation reserve be established, beginning in 1986, with the following characteristics:

- a target number of acres would be established as the appropriate objective for a long-term conservation reserve.
- the CCC would take bids for long-term (seven to ten-year) contracts with farmers to convert land now cropped into permanent less intensive, sustainable uses such as haying, grazing, and forest.
- appropriate consideration should be given to the impact on rural communities of removing this land from crop production when the acreage in some areas is concentrated (where appropriate, direct assistance for redevelopment strategies of state and local governments might be provided).
- this land could be returned temporarily to more intensive production only in the event of a national emergency.

Such a reserve would not only conserve the soil, but also would absorb some excess production capacity, thus strengthening the farm economy indirectly.

Limiting Production

Given current and projected conditions of productivity, agriculture will tilt toward surpluses in more years than not. With greater responsiveness to market signals, U.S. producers would be expected to adjust capacity over time, avoiding the chronic imbalances which occurred in the past when program incentives introduced distortions. However, there still may be times when good weather in consecutive years brings large harvests, or demand slackens to an unusual extent, or both, causing recession in the agricultural economy and threatening the long-term health of the food sector. If commodity reserves already were at desired levels, and recommended adjustments in other programs had been accomplished, it then might be desirable to reduce production temporarily to avoid a major crisis. A medium-term land diversion program is needed to help American agriculture weather such difficult periods; thus, it is recommended that authority for a land diversion program be continued through the life of the 1985 Act with the following attributes:

- the objective would be to reduce production temporarily, with soil conservation considerations prominent.
- a bid system would be used to enroll acreage of proven productivity for up to three years. Farmers would indicate the payment required to attract cropland with a proven yield history. Bids would be accepted until potential production was reduced by the desired amount. The duration of the reserve would depend upon the expectation for surplus production.
- appropriate conservation measures would be required on the land idled. Moreover, some form of premium payment

could be devised to attract the most highly erosive land remaining in crop production.

The effectiveness of voluntary set-aside programs always has been limited by their significant "slippage" since farmers enrolled their least productive acreage, kept their most productive land in cultivation, and frequently applied more inputs and farmed more intensively. Thus, the reduction in production has never been commensurate with the quantity of land idled by the program. A bid diversion program, together with necessary amendments to the law, would eliminate much of the "slippage" problem, effectively reducing production at the lowest possible cost. Because the land would be diverted for up to three years, program administration would be easier and conservation goals better achieved.

National Reserve Policy

There is a proper role for the public sector in encouraging the holding of commodity inventories to ameliorate the wide swings that occur. These additional inventories reduce the possibility of highly disruptive price swings and serve to enhance our reputation as a reliable supplier to our extremely important foreign markets. But, such inventories should not be a price supporting mechanism; rather they should be used for buffer stock and reliable supplier objectives. Since society obtains some benefit from inventories above those the private sector would ordinarily hold, it should be willing to share in the cost of holding these stocks. Such an inventory program, based on amendments to present law, would have the following characteristics:

- the inventory stocks would be farmer-owned, with CCC ownership of surplus commodities reduced by revisions of the loan program.
- the maximum size would be specified as some proportion of previous domestic usage and export sales, e.g., 15 to 20 percent for wheat and 12 to 15 percent for feed grains.
- producers would bid for a public payment for a specific commitment to storage, with the lowest bids accepted until the target inventory was reached.
- there would be no release price. Farmers would be free to remove the product from the inventory at their discretion without restriction.

Other Commodity Programs

There are several commodities for which the government operates other programs that are intended in one fashion or another to increase prices received by farmers. Some of these restrict supply by various means and others simply guarantee a price, with the government buying and storing the surplus. These include dairy, peanuts, sugar, tobacco, wool and mohair, and honey, among others. The first four are the most significant.

These programs have tended to be significantly more restrictive than have other programs, and the dairy program has been the most costly single program. In each case, the first step is to define changes that put this constellation of programs on the same basis as the other commodity programs. The objective should be minimal price protection after a time, permitting access to world markets. Temporary income payments may be necessary to facilitate transition to a freer market at a specific future date.

The general principles outlined here are applicable to all commodities. In some areas, this will mean a more determined move toward reallocation of resources, but with rational transitions to the market. In dairy and sugar, for example, this may mean a 6- to 8-year transition period away from price supports, along with adjustments in import controls. In tobacco and peanuts, it may mean developing the principle of not transferring benefits from current allotment holders, and the gradual elimination of programs that provide for monopoly rent. Both in these commodities and others, transition to a more market-dependent system may require specific public expenditures.

Producer-Organized Stabilization

Cooperatives have played an important role, allowing farmers to join together to purchase supplies more effectively, provide themselves credit, and process and market their crops. Properly regulated and efficiently managed, cooperatives offer farmers the opportunity to compete more effectively with large scale organizations with which they do business. To this extent, they help preserve moderate scale agriculture in this country.

Likewise, marketing orders properly set up without restricting entry into production of the commodity, without price supports, efficiently administered, and with regulation to prevent undue price enhancement are another self-help mechanism for farmers. By the use of these, farmers have sought to stabilize, maintain, and develop markets to assist in getting fair prices for their commodities. Consumer participation to improve communication, understanding, and cooperation can enhance the operation of these programs.

Properly regulated self-help programs for farmers should be supported and encouraged.

Farm Credit Assistance: A Special Program

While we are proposing a program of less government involvement in agriculture over the longer term, we feel that the current financial situation in the farm sector is serious enough to warrant immediate public attention and action.

Our farm and food sector as much as any other has borne the brunt of an unusual confluence of adverse political, economic, and environmental conditions, including a long worldwide recession, debt crisis in developing countries, high interest rates, a strong dollar, increasing protectionist trends in many countries, and unusual weather. It is folly for the government to stand by while large numbers of individuals and their communities are in serious trouble. The government can and should take steps to avert further deterioration.

The 1970s export boom led many farmers to overly optimistic expectations about the future. Rising farm incomes and low real interest rates produced a rapid surge in land values. Many farmers borrowed heavily to expand their operations. Rising asset values generally kept pace with debt accumulation through the 1970s, but the onset of the recession in the early 1980s greatly altered the situation. Farm asset values have declined more sharply in the past 3 years than any time since the 1930s. The farm debt-to-asset ratio has increased from 16.5 percent in 1980 to 20.8 percent. At the same time, much lower farm income and continued high real interest rates have reduced the ability of many farmers to service their debts. Interest payments have risen dramatically, and in 1983 exceeded net farm income (by 32 percent) for the first time ever.

Present conditions severely affect farmers who are heavily debt-leveraged. USDA now estimates that 389,000 farms, 18 percent of all farms, could be classified as financially stressed—having a debt-to-asset ratio of 40 percent or more (Table 4). These farms hold about 56 percent of the total sector debt. This level of indebtedness does not mean that all these farms face bankruptcy since many with sufficient cash flow can manage this debt. If we exclude the largest farms with over $500,000 in sales, generally farms more industrially oriented (e.g., sod farms and integrated broiler operations) and typically operated with high debt leverage; and farms with under $50,000 in sales, for whom farming generally is not a significant source of income and who qualify for and expect to repay debt from other income, there are some 178,000 commercial farms holding 36 percent ($77 billion) of the farm debt.

This situation affects not only farmers but many rural banks and other agricultural lenders. Moreover, with little significant improvement expected in the agricultural economy over the next two years, the situation could become much worse.

We recommend the enactment, on a temporary basis, of a new farm credit assistance program. Congress should establish a new farm loan authority in 1985 to help farmers and farm lenders adjust to the recent and prospective decline in the value of agricultural land.

This authority would have a limited life and would rely principally on the capital markets rather than on government for its loan funds. It should be operated under lending criteria which adhere closely to standards of long-term profitability such as those generally imposed on small business borrowers throughout the U.S. economy. None of the farmer-borrowers and financial institutions taking advantage of the authority's programs should be exempted from absorbing losses.

In the current situation, reducing price support and payment guarantees even over an extended period, however necessary, will make economic survival even more precarious for many farmers. Yet the extensive restructuring of farm debt which might be necessary cannot be conducted properly by any existing public agency or financial institution, since it involves all farm credit institutions. A new temporary agency is required to meet what is, for many, an emergency situation.

We have no illusions about keeping all existing farmers in business. Farming is dynamic and will remain so. But some farm regions and communities are now so depressed that both economic and political realism require bold and innovative action.

Need for New Approaches to International Food Assistance

PL 480, the U.S. Food for Peace program, has been of immense help to nations lacking adequate foodstuffs. It also was seen initially as a means of disposing of surplus U.S. production.

In present-day political and economic terms, there still is an attractive symmetry between the U.S. food production capacity and many developing nations' inability to feed their

Table 4:
Number and Percent of Farms by Debt/Asset Ratio, 1983

Sales Class	Total Number of Farms	Farms with Debt/Asset Ratio of 40 Percent or More			
		Number	Percent of Sales Class	Percent of Total Farms	Percent of all Debt
$500,000 and over	29,600	13,200	44.6	0.60	9.7
$250,000-$499,999	90,200	28,600	31.7	1.30	9.3
$100,000-$249,999	288,200	79,200	27.5	3.60	16.4
$50,000-$99,999	300,700	70,400	23.4	3.22	10.1
$25,000-$49,999	272,800	48,400	17.7	2.21	4.1
$10,000-$24,999	374,200	46,400	12.4	2.12	
Less than $10,000	833,600	103,200	12.4	4.71	
Total	2,189,300	389,400	17.8	17.76	56.1

Source: ERS, USDA. Farm numbers derived from 1982 Census of Agriculture.

hungry. Yet in some cases neither U.S. nor developing country interest necessarily is served only by continuing shipment of U.S. foodstuffs, at concessional or below-market price, to food-deficit nations. (We refer here not to crisis or famine situations where humanitarian shipments are necessary but to those where nations capable of greater agricultural development chronically remain food-short.)

This is true when use of food aid is allowed to interfere with constructive efforts to develop agriculture. If reliance on food aid is not part of a balanced development strategy, a vicious cycle can be set perpetually in motion. The poor country does not develop its own rural sector and food supply. It cannot generate sufficient export earnings in other sectors. Population grows. More food imports are necessary. National income growth is retarded.

Economic Development and Market Building

U.S. food assistance programs have evolved to meet this reality. In PL 480 and other programs, emphasis increasingly, and properly, has begun to shift from simple export of U.S. production (most often described in humanitarian terms such as "feeding the hungry") to a multi-faceted strategy which recognizes the economic, geographic, climatic, demographic, social, and other differences among aid-recipient countries and which attempts to devise country-by-country and region-by-region strategies accordingly. Food aid, used in this context, can become an important contributor to overall development.

For example, in the 1960s, Asia accounted for much of Third World food imports. Yet food production and yield growth rates in Asia increased 20 percent from the 1960s to the 1970s. These increases came from development of modern high-yielding crop varieties and adoption of attendant production systems. Food aid to Asia helped to permit the range of national actions necessary.

Based on current trends, Africa in the 1980s might be compared to Asia in the 1960s. Population in Africa is growing twice as fast as food production. Food exports are declining at an annual rate of nearly 5 percent and imports increasing by more than 7 percent.

In Africa, the necessary technological breakthroughs have not yet occurred. The "Green Revolution" has not affected millet, cassava, or sorghum, staples on the continent. Africa is handicapped by nutrient-poor soils and little prospect of adequate water control. Still, yields can be improved through use of better cultivation techniques and improvements in infrastructure. Beyond this, Africa needs technology to raise labor productivity on smallholder farms, to increase the food available to wage workers, and to create employment through increased demand for rural products and services. Also in Africa, large investments in infrastructure will be necessary so that food transport costs (double those in Asia) can be reduced. With these improvements, reform of marketing systems will be possible, to produce a larger and more reliable food supply for the cities.

In light of a situation such as that in Africa, immediate food assistance for hungry and nutritionally deprived groups is necessary. But if food aid is to be truly effective over the long run, in Africa and elsewhere, wide ranges of assistance will also be necessary, to permit food aid to make its maximum contribution to balanced overall growth of now-poor economies.

Some of the following elements will be needed, in combination, if programs are to be successful:

- proper stewardship of arable land.
- low cost health, nutrition, and family planning services directly targeted on low income and rural families.
- potable water, sanitation, and epidemic disease control.
- basic education programs.
- credit, fertilizer, seeds, and other inputs focused on farmers and small rural industry.
- capital and technical assistance to improve the capacity of national and local agricultural research, education, and extension systems to reach farmers effectively.
- technical assistance in revising land tenure patterns.
- capital and technical assistance for development of rural infrastructure, including rural roads, rural electrification distribution, and irrigation canals.
- development of storage, transportation, and marketing facilities.

All of this implies the setting of discrete and limited objectives, varying from country to country, to reflect local needs and our capacity to help. These objectives should include such things as national food production targets, employment generation, integrated rural area development, reductions in infant mortality, and improved health and nutrition.

U.S. taxpayers, agricultural producers, and agriculture related industry increasingly must think of "food assistance" as part of a total development policy. Ultimately, when individual nations are successful, they will begin to participate in demand for a whole range of U.S. products and services, including agricultural products and services, which they cannot now utilize. As agricultural growth proceeds, general economic growth tends to proceed (Table 5).This creates demand for ever more products and services.

We believe that over the course of the next several years, attention should be given to modifying current U.S. programs in ways which will allow them to better serve the following objectives:

- *increase the effectiveness of emergency aid.* This should include improvement of our ability to respond both quickly and flexibly in emergencies. Budget and reserve policies, logistics, and need determination should all be reviewed.
- *improve the operations of concessional aid in relation to short-run stabilization requirements.* Progress toward changes in domestic farm programs outlined elsewhere in this report will affect the nature and size of the U.S. surplus commodity holdings. This will both permit and require some restructuring of our international commodity contributions. As this is done, we should confront and attempt to resolve the tensions between short-run general U.S. political objectives and the medium-term support for developing countries which U.S. concessional aid can provide.

Table 5:
Growth of Agriculture and GDP in the 1970s

	GDP Growth			
Agricultural Growth	Above 5 Percent		3-5 Percent	Below 3 Percent
Above 3 Percent	Cameroon China* Colombia Dominican Rep. Guatemala Indonesia Ivory Coast Kenya Korea, Rep. of	Malawi* Malaysia Paraguay Philippines Thailand Tunisia Turkey Yemen Arab Rep.	Bolivia Burma* Mali* Somalia* Tanzania*	Liberia Nicaragua Sengal
1-3 Percent	Costa Rica Ecuador Egypt Lesotho		Bangladesh Central African Rep.* El Salvador Haiti* Honduras India* Pakistan* Sri Lanka* Sudan* Upper Volta*	Burundi* Sierra Leone* Zaire*
Below 1 Percent	Morocco Nigeria		Togo*	Angola* Chad* Congo, Rep. Ethiopia* Ghana Madagascar* Mauritania* Mozambique* Nepal* Niger* Uganda*

GDP = Gross Domestic Product
*Low income countries.

Source: World Bank.

- *begin a process of systematic improvement of our international development aid policies.* While this objective goes well beyond the issues which are the primary focus of this report, we believe that the operations of international assistance programs are at a point at which significant efforts to improve their impact and effectiveness in the poorest nations are warranted. U.S. policies should be reoriented to such an objective, as discussed above.

As these longer term changes in policy are considered, it will be important to maintain a significant level of commitment in our international food assistance programs, including both PL 480 and contributions to international agencies such as the Consultative Group on International Agricultural Research, the International Fund for Agricultural Development, and the World Food Program.

Need for a Renewed Commitment to Domestic Food Assistance

Although the bulk of this paper is related to farm policy issues, that is not a reflection on the importance we place on domestic food assistance. Rather, it is a recognition that the basic food assistance programs are in place and require more adequate funding, rather than major structural reforms.

Progress was made in the late 1960s and early 1970s in using federal-state programs to reduce the impact of poverty in America. The combined effects of inflation and recession in the late 1970s and early 1980s, and the recent cutbacks in benefits, have set back these efforts.

Even if, as we hope, the current economic expansion can be sustained for a substantial period of time, a number of groups in society will still face problems of poverty. These include many who lack the skills which a contemporary economy demands; low-wage workers; workers facing the permanent elimination of jobs; children whose parents have short or long-term employment problems; the severely disabled and chronically ill; and the elderly poor.

Since none of the causes which keep these groups in or near poverty is likely to be eliminated quickly, or even in some cases at all, any income support or related benefit policies which are proposed must take account of the requirements of a longer term framework. Within this framework, we believe that as a society we should work to raise the "floor" (or, strengthen the "safety net") which poverty programs provide.

In the present period, with the numbers of poor people having increased, unemployment still high, and evidence of increased hunger abundant, federal food programs must be given special emphasis.

In FY 1983, federal spending on food programs totaled approximately $18.5 billion. Of course, food programs *per se* are not the only federal contribution to reducing hunger. "Means-tested"[5] cash benefit programs also contributed, indirectly, by alleviating poverty. In all, these programs comprised less than five percent of the unified federal budget in 1983.

Despite the fact that food and cash assistance are a relatively small part of the unified federal budget, however, they bore a very large share of the budget cuts that were made between 1981 and 1983. Legislative actions in these years reduced cumulative outlays through FY 1985 for both Food Stamps and Aid to Families with Dependent Children (AFDC) by 13 percent and for Child Nutrition programs by 28 percent. This compares to a 1 percent cut in veterans' pensions, a 3 percent cut in civil service pensions, a 3 percent cut in social security, and a 33 percent increase in defense spending.

In 1984, some small but important steps were taken toward halting this trend. A fraction of the benefits cut from Food Stamps and AFDC were restored. Relative to the size of the budget as a whole, however, these increases were trivial.

Food and means-tested cash transfer programs, therefore, deserve special consideration, even as the rest of the budget is being trimmed. Studies demonstrating increases in hunger and its effects have documented the current need, and there has been a clear recognition that the low-income "safety net" needs repair.

For the foreseeable future, the current set of programs will be necessary, and there is considerable evidence documenting their effectiveness. There is now a body of literature on the nutritional impact of direct hunger intervention programs such as the supplemental food program for Women, Infants, and Children (WIC), and the National School Lunch and School Breakfast programs. All of them have a positive impact not just on nutritional intake but even on nutrient levels within the body. WIC has been shown to have a positive impact on specific health outcomes, particularly low birthweight, which is correlated with infant mortality and disability. WIC has been shown to be cost-effective in terms of future health cost savings—one major study indicated that prenatal benefits saved about three times what they cost in preventing health problems.

The positive effects of the Food Stamp program have also been assessed extensively. Over the period from 1965-66 to 1977-78, during which food stamps became available to significant numbers of poor persons, the gap in nutrient intake between the poor and others narrowed considerably. The U.S. Department of Agriculture Nationwide Food Consumption Survey, conducted in 1965 and 1977, noted that in that 12-year period, households with incomes below $10,000 showed positive changes in their intake of many specific vital nutrients. Iron intake of infants doubled. In addition, the Survey for later years has shown that food stamp recipient households have better diets than eligible low-income households not participating in the program.

The effectiveness of food stamps has been demonstrated in other ways, as well. Two studies, the 1973-74 Bureau of Labor Statistics Consumer Expenditures Survey and the 1975 Department of Agriculture Household Consumption Survey, showed that food stamp shoppers are at least as good as and perhaps a bit better than average shoppers at getting the most nutrients for their food dollar.

The nutrition problems of the poor clearly are related to low income, to the basic fact that there are not enough food dollars to go around. This was true until programs grew to levels reached in the 1970s, and has become true again in the mid-1980s. Since inflation and cuts have eroded the value of program benefits, a number of national and local studies have documented increased nutrition-related difficulties among the poor. In particular, there is evidence of more cases of stunted growth, anemia, and other nutrition problems of children, infants, and pregnant women, including, in some parts of the country, increased incidence of low birthweight and infant mortality.

In short, additional attention to food and means-tested cash programs will help to move us back toward the situation which obtained in the late 1970s, when domestic hunger was less of a problem than it is today.

In particular, three objectives should be pursued.

First, the effectiveness of food aid as a countercyclical program designed to offset the effects of high unemployment and low disposable income should be ensured.

Eligibility for food stamp benefits is structured in such a way that participation expands when the overall economy contracts. This is a primary reason for increases in program spending during recent periods of high unemployment. The countercyclical nature of this program should be considered in determining its overall spending levels and benefit structure. We therefore recommend the following:

- *update the asset limitations in the food stamp program, and remove the legislative cap on overall budget levels.* The provisions in the food stamp law which restrict participation on the basis of ownership of assets have not been revised since 1971, except that a new standard, for cars, was introduced in 1977. Inflation has reduced the real values involved, and the result is that the asset limits now serve to exclude some of those whom the program is in fact intended to serve. Further, both these limits and the conditions of eligibility are tightly defined. Together with benefit constraints, these provisions contain program spending. The addition of an authorization cap requiring annual legislative action complicates program administration, and inevitably raises the possibility that persons who need and deserve help as the program defines them may not receive assistance. We as a nation should be willing to ensure that everyone who meets the stringent program criteria should receive the benefits which the law provides. At the same time, it is important to ensure that the limited benefits provided are in fact being directed to those eligible. Food stamp program error rates have declined significantly in recent years, and continued state efforts to improve program administration should be supported.

- *ensure participation of the homeless in the food stamp program, and maintain adequate levels of support for emergency feeding programs.* The 1984 report of the President's Task Force on Hunger found that many states require a fixed address for participants in the food stamp program. Federal policy should be clarified to ensure that such provisions do not render ineligible homeless individuals, who are likely to be in the most need of such assistance. Similarly, when there have been reports of significant increases in the numbers seeking help from "soup kitchens," the effective functioning of such voluntary sector programs should be supported, even as steps are taken to minimize the necessity for providing such assistance.

Second, the adequacy and/or reach of food assistance as a "safety net" program should be increased.

As noted, the food assistance programs are a critical element of the "safety net" for those with little or no regular source of income. A number of small adjustments could make a significant contribution to enhancing the effectiveness of the benefits these programs provide. These include:

- *keeping the cost adjustments used in determining food stamp benefits more in line with economic realities.* At present, annual revision of food stamp benefit levels, based on the so-called "Thrifty Food Plan," or minimum adequate diet, lags from 3 to 15 months behind the actual costs on which it is based. This problem should be corrected. In addition, the current deduction for "shelter" costs is badly out of date as a result of large increases in energy prices over a period of several years. Appropriate adjustments are required.
- *improving the effectiveness of programs aimed specifically at children.* The food programs designed to increase the nutrition of poor children and infants are among the most cost-effective investments we make as a society in improving the chances of individuals to live healthy lives. Priority should be given to increasing participation in the WIC program. In addition, some improvement should be made in the school feeding programs, to offset the harsh effects of recent cuts affecting low and moderate income children. These programs function as an essential supplement to the food stamp program. Additional funds should be made available to improve the nutritional value of meals served in the school breakfast program.

Third, certain aspects of food and cash assistance programs should be restructured, to provide a more consistent and effective system of public support.

Several steps might be taken in the near term to rationalize the current system of federal and state income support benefits for the poor. We recommend the following:

- *reducing the disincentive which states currently confront in raising cash assistance benefits, in relation to food stamps.* It is now the case that federally funded Food Stamp benefits are reduced by 30 percent of the amount of any increase in AFDC payments. This loss could be offset by adjustments in the rate of federal contribution to AFDC. It is particularly important in view of the fact that in many cases state AFDC benefit levels have declined fairly significantly in real terms as a result of the effects of inflation and pressures on state finances over a period of a decade or more. Over the next year or two, as at least some states contemplate possible benefit increases, it will be especially important for the federal government to help direct adequate resources to those in the most need.
- *reducing the disincentives for individuals who are working, but earning low wages.* This would include revising the federal income tax limit on liability, to insure that individuals with poverty-level incomes are not subject to income tax; adjusting the Earned Income Tax Credit to account for inflation; restoring the proportion of earnings deducted for taxes and work expenses in computing Food Stamp benefits, to the level allowed before the latest benefit cuts went into effect; and including a separate deduction for child care costs in the Food Stamp program.

A number of other modifications to food programs, such as improving the range of commodities available in the needy family program, or reinforcing job assistance, should also be considered.

Footnotes

1. The real trade-weighted dollar exchange rate for agricultural exports is an index average based upon the rate of exchange of the dollar for other currencies, weighted by each nation's share of U.S. agricultural exports and adjusted to reflect relative inflation rates of trading nations.
2. These trade figures include only trade among the 12 major regions of the world; they exclude intraregional trade.
3. The loans are "nonrecourse" meaning that the forfeiture of the commodity fully satisfies the obligation—the lender has no further recourse.
4. Small and mid-size farms are those commercial operations primarily dependent on farming for income, with up to approximately $200,000 in annual product sales.
5. Programs with income-related eligibility restrictions, i.e., Aid to Families with Dependent Children, the Supplemental Security Income program for the elderly and disabled, and the Earned Income Tax Credit for low-income workers.

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ROUTING REQUEST

GOVERNMENT CROP PROGRAMS: HIGH COST AND FEW GAINS

by Clifton Luttrell

During the Great Depression of the 1930s the U.S. government embarked on a series of massive programs to increase the income of the nation's farmers. The effect was to remove the production of "basic" crops from the competitive market and, instead, to place the major economic decisions about crop production and marketing in the hands of the federal government.[1] Although these programs have varied over the years in response to new experience, political pressure from farm groups, and changes in the administration and Congress, their general features have remained virtually unchanged. They have shown remarkably little consistency, however, in their economic impact: some have increased crop supply, some have reduced supply, and still others have increased demand. In some instances, all three effects have operated at the same time.

While the social or real cost of the programs is extremely difficult to measure, estimates place it in excess of $9 billion annually at the 1983 level of government outlays.[2] Yet, despite their high cost, the programs have had few successes. Gains to families on smaller farms have been minimal, and farmer protests are as vociferous as ever. Indeed, journeys to Washington by groups of farmers to harangue Congress and the administration for special assistance are being made with increasing frequency.

This study traces the development of government crop programs from their beginnings, with the Agricultural Adjustment Act of 1933, to the present, with special reference to the programs for food grain (wheat and rice), feed grain (corn), and cotton. It outlines the attempts made to generate higher returns for farmers and explains why these efforts failed. Finally, it offers some recommendations for future disposition of the programs.

Three Techniques

Reducing Supply

The 1933 act stipulated acreage controls for specified crops, payments to farmers who agreed to limit the number of

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acres planted, and price supports for crops sold. The acreage controls and payments for limitations on planting were intended to reduce production and increase prices of specified crops. Price supports served as safety nets, allowing farmers to sell crops at the support prices if crop-size reductions did not cause market prices to rise as high as desired.

The Commodity Credit Corporation (CCC), a federal agency established in 1933, supported prices by making nonrecourse loans on stored crops. Farmers would deliver crops to warehouses or grain elevators; the CCC then provided loans, accepting the elevator or warehouse receipts as collateral. The farmer could either pay off his loan if market prices rose above the support levels or surrender his crop at the termination of the contract, thereby canceling his obligations to the CCC.

In the early 1930s the crop programs, with the exception of the cotton program, relied largely on production controls through acreage reductions and/or marketing quotas to achieve their price goals. The price-support loan rates, that is, the "prices" paid by the CCC for crops held as collateral, were relatively low. In the late 1930s, however, the CCC loan programs began to have more influence on prices than the acreage reductions. Under pressure from producers, Congress increased most loan rates above market-clearing levels, and accumulations of surplus stocks accelerated. During World War II these stocks were used up, but the support price was also increased to encourage further production.

High support prices were continued following the war, and surpluses soon reappeared. Once again they were used up--this time during the Korean War in the early 1950s--but surpluses appeared again following the war. Although price supports were reduced somewhat in the early 1950s under a more flexible support program and a massive export-subsidy program, stock accumulations of some crops began to exceed annual production by the mid-1950s. In the 1960s direct land-diversion payments were substituted for part of the price-support payments. As direct payments increased, price supports for most crops were reduced close to market-clearing levels. As a result, crops began to move more freely through market channels, and commercial exports increased.

More recently, target prices, which give farmers a guaranteed price for their crops through "direct deficiency payments," have been set. These payments are determined by the difference between the loan rate or the market price and the target price. Disaster payments and farmer-owned grain-storage programs have also been added. Disaster payments provide farmers protection against such natural hazards as unfavorable weather and floods, and the grain-storage programs provide subsidies to farmers for storing grain, which results in longer-than-normal holding periods and larger-than-normal stocks of grain.

Direct payments to farmers for all these purposes exceeded $9 billion in 1983, or more than half the net income of all farm operators. The change from high support prices to direct payments as the primary method of providing farm aid has reduced the inventories of surplus crops typical of the 1950s and early 1960s, increased exports, and reduced crop prices to domestic consumers.

Increasing Demand

Demand-increasing programs for crops received a major boost with the passage of the Foreign Aid Act in 1947, authorizing government subsidies for the export of CCC-owned stocks of surplus crops. Enacted in 1954, Public Law 480 (also know as the Food for Peace Act) made such subsidies a permanent feature of crop-aid programs. For a brief period, subsidized exports provided an outlet for much of the surplus crop purchased by the CCC.

Further contributing to increased crop demand in the post-World War II years have been a number of programs designed to increase domestic consumption, chief among them the Food Stamp and Child Nutrition programs. The cost of these distributions was relatively moderate until recent years, totaling only $300 million in 1965. Their cost jumped to $6.2 billion in 1975 and to $15.2 billion in 1982.

Increasing Supply

The major thrust of U.S. crop programs has been toward reducing supply or increasing demand in order to increase prices. Other programs, however, have sought to increase crop production while at the same time reducing prices. Initiatives sponsored through the Agricultural Research and Extension program and the Soil and Water Conservation program, both begun in the 1930s, are but two examples.

In addition, a sharp jump has occurred in the use of subsidized credit by crop producers. Such credit increases the total resources used for crop production, enabling farmers to acquire more fertilizer, better seed, and more equipment, and to undertake projects that improve land productivity. All of these tend to increase crop production and lower prices.

Early Experiments and Their Consequences: A Brief History

The early supply-management and price-support programs for crops suffered from major drawbacks that did not diminish over time. The artificially high crop prices that resulted from price-support programs had two prominent effects on resource and crop markets here and abroad. First, they drew more farmers and non-land resources into the industry. The resultant increase in supply came just when American farmers were facing a decline in export demand due to a sharp rise in foreign production of a number of crops exported by the United States. Second, higher-than-market crop prices reduced domestic consumption, leading consumers to increase the use of substitutes for the specific crops affected.

A Shrinking Cotton Market . . .

The early programs had especially damaging effects on the market, since a large portion of the American cotton crop was grown for export and a number of close substitutes were available. Prior to the introduction of federal supports in 1933, U.S. exports of cotton totaled about 60 percent of annual U.S. production and about two-thirds of total world exports. But the demand for cotton is quite elastic. Wool, silk, and other vegetable fibers have competed with cotton for ages, and a new and vigorous rival--synthetic fibers--emerged to take an increasing portion of the domestic and world fiber markets after World War II. Due to this elasticity of demand for U.S. cotton, any action to increase American cotton prices provided great incentive to increase cotton production abroad and reduce consumption at home. Thus there was little likelihood that the government would aid cotton farmers successfully. Nevertheless, the government tried.

Rigid acreage controls and price supports were applied to cotton following an emergency plow-up program in 1933. Price supports (through the CCC loan rate) were immediately set at 10 cents per pound, well above the market price of about 7 cents, for those who agreed to cut back on plantings. Most farmers cooperated with the program, and cotton acreage declined approximately 25 percent in 1934. Production was down around 30 percent, reflecting both the decline in acres planted and a severe drought. In spite of this, at the end of the marketing year a sizable portion of the crop was added to the loan and carryover stocks, which were already high as a result of stabilization operations by the Federal Farm Board, an agency created in 1929 to stabilize farm commodity prices. With the exception of two short wartime periods, the general pattern established in 1933 and 1934 continued into the mid-1960s.

At the end of 1944, the total carryover of cotton exceeded 11 million bales, or almost one year's production. Fortunately for the program, the 1945 and 1946 crops were poor, and the sharply increased demand for cotton after the war permitted liquidation of most of the surplus stocks by the end of 1946. Support prices were maintained at above-market levels, however, and by the late 1940s carryover stocks had reached about 7 million bales. These were liquidated during the Korean War, but with continuing high support prices, surplus stocks were soon on the upswing again. By the mid-1950s, the stock of surplus cotton had again reached one year's production.

Consequently, the cotton industry was being forced to contract as federal programs priced cotton out of both export and domestic markets. Cotton exports dropped from a pre-program average of 8.7 million bales per year in 1931-33 to 6.0 million in 1935-37 immediately following the introduction of federal aid. Table 1 indicates continued decline during the 1940s, a mild increase in the 1950s (as a result of a massive government subsidy program), and a decline in the 1960s to about one-half the pre-program level. The proportion of U.S. cotton production exported dropped from 60 percent prior to the programs to 32 percent in 1945-47.

Table 1

Acreage, Production, and Exports of Upland Cotton

Three-Year Average	Acres Planted (Millions)	Production	Exports	Production Exported (%)
		(Millions of Bales)		
1931-33	38.6	14.4	8.7	60
1935-37	30.7	14.0	6.0	43
1945-47	19.5	9.8	3.1	32
1955-57	16.4	13.0	5.4	42
1965-67	11.3	10.6	4.1	38
1975-77	11.5	11.0	4.5	41
1980-82	13.4	12.2	5.9	48
1984*	11.1	10.4	6.1	59

Source: U.S. Department of Agriculture, Agricultural Statistics.
*One year only.

The decline in exports reflected the high support prices for U.S. cotton, not a decline in world demand. As evidence we have the fact that the U.S. share of world cotton exports dropped sharply only after the application of federal aid. In 1930-32, the United States supplied 68 percent of world cotton exports. The U.S. share declined to 45 percent in 1935-39 following introduction of the programs, held stable immediately following World War II, and then continued down into the late 1960s. As shown in Table 2, a recovery began in the early 1970s.

Table 2

United States and World Exports of Cotton (Annual Averages)

Selected Years	United States (Millions of Bales)	Principal Exporting Nations of World (Millions of Bales)	U.S. Export Share (% of World Exports)
1925-29	8.6	13.2	70
1930-32	8.2	12.1	68
1935-39	5.6	12.5	45
1945-49	4.1	9.0	46
1955-59	5.3	13.1	40
1967-69	3.4	14.2	24
1970-73	4.9	16.8	29
1980-81	7.5	16.1	47

Source: U.S. Department of Agriculture, Agricultural Statistics.

Damage to the cotton industry occurred because, as expected, the acreage-control program reduced production during the first few years--despite farmer efforts to mitigate the supply effect of acreage controls by reducing plantings on the least fertile soil. By the end of World War II, cotton production was down to two-thirds of pre-program levels.

. . . But Little Impact on Other Crops

Until the end of the Korean War, the aid programs discussed here probably had little impact on either production or prices for crops other than cotton. Generally, individual producers were not subject to cross-compliance acreage restrictions, so when a specific crop was restricted, a producer often expanded plantings of another. Some declines occurred in production in the mid-1930s, but they were due largely to a severe drought rather than to acreage controls. Few stocks accumulated because price supports were held down to near market-clearing levels until the latter part of the decade. The small surpluses that did accumulate were liquidated during the early years of World War II at little cost to taxpayers.

With rising wartime demand all surplus wheat was eliminated by 1943, and during the next four years market prices for wheat were above the support levels. Allotments and marketing quotas were abandoned, and carryover stocks were about normal. Following the war, U.S. price supports remained high, at 90 percent of parity for most crops, and exports declined as war-torn nations recovered and moved toward normal levels of production. By 1949, the market price had dropped below the support level and surplus stocks returned. By mid-1950, the CCC owned or had under loan about one-fourth of the prior year's production. Surpluses were liquidated again during the Korean War, but they soon reappeared after hostilities ceased. Acreage controls were reinstituted in the early 1950s, with apparently little effect as production continued at high levels. Carryover stocks of wheat were in excess of a million bushels during 1954 and 1955, representing a full year's production.

Rice, although a minor crop relative to wheat, cotton, and corn, is important in Arkansas, Louisiana, Texas, and California, and was included in the price supports established by the 1933 act. Prior to World War II there was little control on rice production, and no CCC loans were used to support rice prices. From World War II until the mid-1950s, however, the aid program for rice was almost identical to that for wheat. Although high support prices were established, the market price for rice rose above its support level during each of the wars, and surplus rice stocks were liquidated. After hostilities in Korea ceased in the early 1950s, surplus rice stocks began to accumulate.

The corn, like the cotton, program began with price supports well above the market-clearing level. These supports were available to all producers who complied with the program's acreage-reduction provisions. Severe droughts in 1934 and 1936 and more moderate loans thereafter, not acreage reductions, were responsible for the liquidation of most of the surplus, however. Loan rates were raised above market prices in the late 1930s, and some surplus stocks accumulated. By 1943, the stocks had disappeared and the emphasis had shifted to increasing output. Government support prices were thus increased further to encourage production. In the late 1940s market prices dropped below the relatively high support price, and stock accumulations occurred, only to be liquidated during the Korean War and accumulate again in the early 1950s. Until the mid-1950s, therefore, corn followed the same pattern as wheat and rice.

Later Attempts to Achieve Goals

The Failure of Export Subsidies

By 1954, crop surpluses, caused by high support prices and the failure of acreage controls to reduce production sufficiently, were reaching alarming levels. Stocks of some crops exceeded a normal year's production, and storage problems were becoming unmanageable. This led to a number of programs designed to increase demand and relieve the crop "glut." Domestic donations to needy groups and child-nutrition programs were expanded, but they were overshadowed by the introduction of an export-subsidy program.

Crop donations had been made to friendly nations throughout World War II and the early recovery years. But the International Wheat Agreement of 1949, more by accident than by design, was apparently the nation's first formal export subsidy program. One major feature of the agreement was the setting of wheat export prices lower than the price-support levels, thus resulting in heavy export subsidies. These subsidies averaged about 62 cents per bushel, requiring government input of $546 million during the first four years of the treaty.[3] Whether this agreement is viewed as a charitable donation from U.S. taxpayers to consumers in recipient countries or as a transfer of wealth from U.S. taxpayers to U.S. farmers, it was at the time deemed a success. Following its termination in 1953, a considerably more massive export-subsidy program was inaugurated with the passage in 1954 of Public Law 480, the Food for Peace Act.

Public Law 480 created permanent export subsidies for crops. It permitted crop sales to foreign countries in exchange for either inconvertible currencies or direct barter of other crops and authorized crop exports for relief purposes. Its impact on crop exports was significant. For example, in 1953-54, the two years prior to the subsidies, milled rice exports averaged 12.3 million hundredweight (cwt), or 36 percent of annual production. By contrast, the 1955-56 exports averaged 18.8 million cwt, or 59 percent of production. These programs were continued on a major scale through most of the 1960s.

The Food for Peace Act contributed little toward the actual betterment of recipient nations. Our export of surplus crops reduced world crop prices and led to reductions in the exports of other crop-producing countries, many of which were less-developed nations. The program clearly reduced incentives for farmers in recipient countries to produce and thus retarded the economic development of these nations. Fortunately, such shipments have been substantially curtailed in recent years.

The combination of export subsidies and greater compliance with acreage controls during this period slowed surplus accumulations for a few years. However, price supports remained high and farmers continued to increase their production of most crops. Thus, in the 1960s, another program was initiated in an attempt to achieve the high price and income goals of crop producers.

Direct Payments

By the early 1960s it had become apparent that the goals for farmers could not be achieved with the price supports, acreage controls, and export subsidies then in effect. The artificially high prices induced more production than could be offset by acreage controls, and, at the same time, they reduced exports by pricing U.S. crops out of competitive world markets. As a consequence, surpluses continued to mount despite major governmental efforts to liquidate them through subsidized export and domestic consumption programs.

In an attempt to relieve the surplus "problem," lower price supports were adopted for wheat, rice, and corn in the mid-1950s and for cotton in the early 1960s. Instead of being reduced to market-clearing levels immediately, however, price-support rates were reduced through a series of annual adjustments. For example, the support price for wheat was reduced from $2.24 per bushel in 1954 to $2.08 in 1955 and $2.00 in 1956, and ranged from $1.78 to $2.03 per bushel from 1957 until the 1970s.

But the effect of the loan-rate reductions on crop producers' incomes was largely offset by direct payments to those producers from the U.S. government. These payments, called "acreage rental payments," had been started on a small scale in the 1930s largely for soil conservation purposes. In most years they amounted to no more than 2 percent of net farm income to operators. When the soil bank was established in 1956, however, these payments were sharply increased, rising from an average of $281 million per year in 1950-52 to an average of $1.3 billion per year, or 11 percent of net operator income, in 1960-62 for farmers who diverted land to conservation and other uses. In 1970-72, with the addition of deficiency payments (the target price minus the loan rate or farm price) and disaster payments (to offset losses from such natural hazards as unfavorable weather and floods), they totaled $3.6 billion, or 22 percent of net farm income. By 1980-82 they were down to $2.2 billion, but they increased sharply with the payment-in-kind (PIK) program in 1983 to $9.3 billion, or more than half the total net income of farm operators. (See Table 3.) Since the 1960s, direct government payments to crop producers have been the major factor in all government crop programs.

Table 3

Average Government Payments to Farmers by Program ($ Millions per Year)

Selected years	Conservation	Feed Grain	Wheat	Rice	Cotton	Wool	Misc.*	Total
1950-52	245	--	--	--	--	--	37	281
1960-62	230	538	88	--	--	54	395	1,314
1970-72	193	1,468	868	--	851	76	152	3,608
1980-82	198	446	496	53	398	36	609	2,237
1983	188	1,097	864	278	662	84	5,837**	9,294

Source: U.S. Department of Agriculture, Economic Indicators of the Farm Sector (1983), p. 54.
*Through 1970, for soil bank only; in later years, for all programs.
**Includes over $5.2 billion for payment-in-kind program.

As a result of expanding direct payments and reducing price supports to near market-clearing levels, most of the surpluses disappeared within a few years. Commercial exports accelerated as U.S. crops began to compete with crops of other exporting nations in the world market.

The CCC loan and acreage-control programs remain in place. Lending continues, but the rate is usually set low enough to prevent the major surplus accumulations typical of the 1950s and 1960s. The lower rates have contributed to rising exports and lower prices for domestic consumers.

With the more stringent acreage controls for non-cotton crops brought about by the cross-compliance requirements established in the early 1950s, the later cropland-idling or soil-bank programs, and the movement of resources out of cotton production, the various crop programs have had a different impact on crop production in recent years than in earlier years: recent programs have had no major impact on total cotton production, but they have marginally reduced production of other crops.

An Evaluation of the Crop Programs

Farmers should be viewed as rational businessmen, entrepreneurs who organize their resources and operate their farms with the objective of maximizing their wealth. Influenced by price and income expectations like any other businessman, each farmer will employ additional resources until net gains can no longer be made. If the expected price of corn, for example, is $2 per bushel and an additional bushel can be produced by adding fertilizer costing only $1.50, the farmer will use more fertilizer; indeed, he will continue to do so as long as he expects to realize a profit from it. The point is, farmers make continuous adjustments in their growing plans in response to expected price changes. The following section will summarize the response of farmers to the government crop-supply and demand-management programs, showing that it has conformed to the basic economic principles that describe rational human behavior.

The Early Programs

Except for short periods following World War II and the Korean War, in the early programs the support price for cotton exceeded market-clearing levels, and rigid production controls were used. When the moderate reduction in output achieved through acreage controls put upward pressure on cotton prices, cheaper fibers were substituted and foreign cotton became more competitive. The CCC loans and export subsidies, which removed a portion of U.S. production from commercial markets, had the same effect. Such noncompetitive pricing caused major cotton market losses both domestically and worldwide. On balance, net cotton revenues declined, consumers paid higher prices, and taxpayers were assessed the program's cost. Everyone--except competing fiber producers and foreign cotton producers--lost.

Wheat, rice, and feed grain, in contrast to cotton, were not much affected by government controls during this period. Farmers did receive some direct payments, largely land rentals, however, for which they gave little in return, and they received higher-than-market prices from the end of the Korean War until the early 1960s. Indigent domestic groups and schools benefited from quantities of giveaways. The short-run benefits of the subsidized export program--some additional food for recipient nations--were offset by lower prices for farmers in those nations, reduced incentives for them to produce, and as a result generated greater dependence on foreign subsidies.

The use of counterpart funds led to an increase in the stock of money in these nations, not to an increase in resources or production useful for development.[4] Domestically, the subsidized export program led to an increase in the price of grain to producers and in the price of food to consumers. U.S. farmers were provided incentives to further increase production.

In summary, taxpayers and consumers were the major losers from crop programs during the pre-1960 years. Consumers paid higher prices because of the higher-than-market price supports, and taxpayers lost the direct payments to producers and the value represented by the surplus food exports. In contrast, farmers gained from the higher-than-market prices.

Programs Since the 1960s

With some relaxation in production controls and a reduction in the loan rate to market-clearing levels, since the mid-1960s cotton farmers have recovered somewhat from the damage caused by earlier programs. They have regained part of their export losses and have become more competitive with other fiber producers in the domestic market.

On the other hand, greater cross-compliance requirements have reduced corn, wheat, and rice production 2-5 percent from what they otherwise would have been.[5] Economist Bruce Gardner estimates that the set-asides for feed grain and wheat caused a 4 percent reduction in output in 1978.[6] But the reduced output and higher prices for grain crops have not been of much benefit to U.S. farmers. Because export demand is elastic, a relatively small increase in price produces a relatively large reduction in quantity exported. Thus the programs that reduced output also reduced exports and lowered domestic consumption to some extent.

Consumers of crop products were clear losers as diminished production and subsidized exports, which continued at reduced rates, contributed to higher consumer prices. How much lower prices would have been in recent years without crop programs is a guess. Assuming, however, that farm prices were 4-6 percent higher with the programs, the average family's food bill would have been in the range of 2-3 percent less without federal price supports.

Direct Payments: A Gain to Producers, a Loss to Taxpayers

Crop producers gained (and continue to gain) from direct payments, but their net gain is less than the net cost of the payments to the economy. For those payments to be possible, not only must taxpayers finance them, but farmers must divert land resources to conservation or other uses or let it lie fallow.

While the overall diversion and payments program has (and had) a negative impact on crop production, the payments themselves tend to increase production. They reduce price fluctuations and natural disaster risks to producers, thereby encouraging them to take more risks and to make production decisions different from those they would otherwise make. Furthermore, production-based deficiency payments have the same impact on resource use as an expected increase in commodity prices: they provide incentives to use additional yield-increasing resources, such as fertilizer and improved seeds, increasing both yield and marginal cost on net. In addition, deficiency payments doubtless provide an incentive for many farmers to remain in the crop production business who, without them, would have found more lucrative employment elsewhere.

Most taxpayers lost the full amount of these direct payments--unless, of course, they happened to be taxpaying farmers.

Which Producers Benefit?

There is little doubt that the current crop programs increase the well-being of crop producers, at least in the short run. The supply-management and price-support loan portion of the programs provided farmers with marginal gains. Price increases to producers more than offset their losses from reduced exports and the slight decline in domestic consumption since the 1960s. Furthermore, the direct payments--deficiency payments, compensation for natural hazards, and diversion payments--were also definite gains.

But an important question is, which producers benefit? Are they the "downtrodden farm workers" whom a large percentage of the nation's population regards with so much sympathy, or are they largely better-off farmers who can very well take care of themselves in a competitive economy without government assistance? An analysis of how resources flow in and out of U.S. agriculture provides some answers to these questions.

As a rational businessman, each producer has an incentive to increase his production of certain crops when expected returns to those crops are increased by government payments, acreage reductions, or subsidized exports. When the number of acres of a specific crop is limited by government controls, the farmer expands by other means. He can, for example, increase production by farming his allotment of acres more intensively: he can add fertilizer, improve seed quality, increase his use of weed and insect controls, employ additional labor, and so on. Because most of the resources for more intensive farming are relatively price-elastic, a relatively small increase in the offering price for these resources assures that a relatively large amount will be supplied.[7]

On the other hand, the quantity of cropland is inelastic with respect of price. Furthermore, because the number of acres that can be planted with controlled crops on any given tract is limited by the program, farmland prices are bid up sharply as anticipated returns to crops rise. This is in contrast to farm labor and other resources, which are diluted by additional inflows and which rise only moderately, staying generally competitive with returns to similar resources in the nonfarm economy. The rapid increase in the value of farmland from 1960 to 1980 confirms this view: it rose at an average rate of 9.2 percent, well above the rate of increase of producer prices, consumer prices, and personal income from farming during this period.

Evidence thus indicates that the increased returns on cotton, corn, wheat, or any other crop as a result of government farm programs over the span of five years or more flowed largely to the owners of farmland at the time the programs were initiated. Other resources, such as labor and operating capital, realized some immediate gains, but those gains soon disappeared as additional labor and capital flowed in from the rest of the economy to dilute returns. The payment-in-kind (PIK) program in 1983 is a clear example. PIK greatly increased direct payments and increased returns to non-land resources, thus providing incentive for an excessive amount of them to flow into agriculture. When PIK was terminated, hardships were magnified as returns to all resources declined sharply. Within a few years, however, returns to non-land resources will again rise to competitive levels, as excess resources flow out of agriculture into more profitable uses.

Welfare Aspects of Crop Programs

While the welfare aspects of government crop programs are not emphasized today, the original programs were motivated by concern for farmer welfare. Proponents argued that farmers required immediate aid as a group, and it was thought that payments would flow from wealthier individuals to poorer farmers. It is no longer clear that this was an accurate statement of the condition of farmers at the time; it definitely does not apply to the farmers who produce most of our crops today.

A large portion of the gains from present programs goes to farmers who earn relatively high incomes. For example, during the 1981-83 period 45 percent of direct payments to farmers went to those with sales of farm products in excess of $100,000, and more than 20 percent was paid to those with sales of over $200,000. (See Table 4.) Net income during this period averaged about 16 percent of sales. Putting this together we find that a significant percentage of transfer payments was made to people whose annual net income from farming exceeded $32,000, and 45 percent of the payments went to farmers whose annual net

Table 4

Distribution of Direct Government Payments to Farmers by Sales Class (%)

	Sales Class ($ Thousands)					
Year	500 and Over	200-499	100-199	40-99	39 and Below	Total Payments ($ Millions)
1980	6.8	14.9	22.4	33.5	22.4	1,286
1981	6.9	15.0	22.5	33.4	22.2	1,932
1982	7.0	15.2	22.9	33.2	21.7	3,492
1983	6.9	15.0	22.6	33.4	22.1	9,294
Distribution of Farms (Thousands)						Total Farms
1983	24	83	177	381	1,705	2,370
Distribution of Sales (%)						Total Value
1983	28.9	18.6	19.3	20.0	13.2	$139 billion

Source: U.S. Department of Agriculture, *Economic Indicators of the Farm Sector* (1983).

income from farming exceeded $16,000. Furthermore, since most direct payments eventually accrue to landowners, benefits from the programs are even more concentrated among upper-income farmers than the above data indicate, and thus only a relatively small amount of payments actually goes to lower-income farmers. In 1983, about 75 percent of all farmers had commodity sales of less than $40,000 and net incomes from farming of $6,000 or less. This group received only 22 percent of direct government payments to farmers.

Direct payments have been limited to $50,000 per farm operator in recent years, a restriction that would seem to hold these transfers in check. But unobserved transfers occurring through commodity pricing and land-value appreciation have not been restrained--and these are of much greater importance than direct payments. As Table 4 indicates, the larger farms sold most of the commodities. Farms with sales of $40,000 or more realized 87 percent of the wealth-transfer gains through the higher prices received as a result of the programs, and farms with sales of $100,000 or more realized 67 percent of the gains. Although gains from higher land values are more difficult to determine, because land ownership is associated with farm size it can be assumed that the major portion went to farmers with larger farms and greater commodity sales. In short, most of the gains realized from government crop programs accrue to farmers with above-average incomes and wealth.

Steps toward Reform

Federal farm programs, started as a relief measure for a depressed farm economy more than 50 years ago, have continued to expand. These programs were intended to generate price increases for crop producers by limiting production through acreage controls and by guaranteeing a minimum price through nonrecourse loans on stored commodities. The programs were not originally viewed as a permanent solution to the farm problem. Indeed, they have contributed to, rather than solved, agricultural difficulties.

As a result, farmer discontent is as great as ever. Because there is no way to prevent labor and other resources from moving into and out of crop production, more of these resources move into farming whenever expected returns to it rise. Hence the initial gains arising from higher support prices are soon diluted by increased inflows of additional resources.

Federal crop programs, therefore, have not contributed to the welfare of farmers by transferring income from more affluent urban consumers to lower-income farm families. Most of the gains to farmers are realized by those with incomes well above average. Rather than transferring income from the wealthy to the poor, the federal agricultural programs serve primarily to transfer income from lower-income consumers and taxpayers to relatively affluent farmers.

In addition to this reverse "Robin Hood" effect, government crop programs are a major handicap to the nation's overall economy. They lead to the overuse of resources in crop production, resources that could be better used in other, more productive ways. By continuing to pursue counterproductive farm policies, we incur a reduction in the value of the nation's output of all goods and services.

The best action that we as a nation could take with respect to government crop programs would be to dismantle them.

Certainly, taxpayers, consumers, and the disadvantaged should not be penalized in perpetuity for past errors in the government's approach to solving the farm problem. The following steps would substantially revise or liquidate our farm programs.

First, if the programs are to be continued, their welfare features should be separated from their commercial ones, and government aid should be channeled directly and explicitly toward welfare benefits alone.

Second, all new public capital inflows into farming should be stopped by limiting the activities of government credit agencies to the servicing and liquidation of existing debt.

Third, all remaining special crop programs should be dismantled over a five-year period. This could be done by dismantling the regulations and by reducing government outlays for each program by at least 20 percent of the 1984 cost each year for the next five years. Lending operations by the CCC could be dismantled immediately, thereby permitting the market to adjust to day-to-day fluctuations and normal seasonal patterns. Supply-control programs could be reduced over the five-year period through annual reductions in the number of acres idled and in payments for this purpose. Other programs, like price-guarantee payments, disaster payments, and so on, would be similarly reduced through reductions in price-guarantee (target price minus market price) payments. The price guarantee in the first year could be reduced to 80 percent of the base year, to 60 percent in the second year, and so on, until it reaches zero in the fifth.

FOOTNOTES

[1] The crops covered by the 1933 act were wheat, cotton, rice, and tobacco. Most other crops were soon added to the list.

[2] Bruce Gardner suggests that in 1978-79, when the budgetary costs of the programs were well below current levels, the social loss was about $6 billion. See Bruce L. Gardner, The Governing of Agriculture (Lawrence: Regents Press of Kansas, 1981), p. 84.

[3] Murray R. Benedict and Oscar C. Stine, The Agricultural Commodity Program (New York: Twentieth Century Fund, 1956), p. 136, table 26.

[4] For further analysis of this subject, see Theodore W. Schultz, "Value of U.S. Farm Surpluses to Underdeveloped Countries," Journal of Farm Economics (December 1960): 1019-30;

and Clifton B. Luttrell, "Good Intentions, Cheap Food and Counterpart Funds," Federal Reserve Bank of St. Louis Review (November 1982).

[5] For an analysis of this question, see D. Gale Johnson, Farm Commodity Programs (Washington: American Enterprise Institute, 1973), pp. 41-48; Gardner, pp. 65-74; and Luther Tweeten and Don Paarlberg et al., Food and Agricultural Policy (Washington: American Enterprise Institute, 1977), pp. 56, 57.

[6] Gardner, p. 28.

[7] See Johnson, chap. 5, for an excellent discussion of this topic.

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DISEQUILIBRIA

. . . when things don't fit and other thoughts

Lynn Daft on

The 1985 Farm Bill

by Lynn M. Daft

President Reagan's late December signing of a new farm bill, The Food Security Act of 1985, culminates a long debate that started as early as mid-1983.

It was not a straight road from the early debates to the farm bill that was signed by the President some two years later. It started with many people calling for landmark changes in policy. Proposals for change often dominated the discussions. At times it appeared that there could be a significant chance for a sharp turn toward new policies.

However, by the end of 1984 it was clear that Congress would not turn away from existing programs. The government would continue to provide price and income support programs similar to those used in the past.

By the time Congress formally convened the debate there was little interest on the Hill and among farm groups in experimenting with new approaches. There was still concern about budget costs, however. But in the end anxiety for the deteriorating farm economy steamrolled over concerns about the cost of farm programs.

Time for a Change

The debate went through several phases. It is hard to pinpoint the beginning. However, by early 1983 the prospect of a new farm policy was attracting a great deal of attention. And most of the discussion pointed to the need for a landmark change in farm policy. Nothing seemed to be going right. In nearly every respect existing policy was deemed a failure:

—Those charged with administering the related programs were critical.

—Farm prices were weak and incomes stagnant, if not falling.

—Exports were slipping.

—Farm asset values were in their second year of decline.

—Lender confidence was eroding rapidly.

—Farm program costs were going through the ceiling.

—The Reagan Administration abandoned its free-market approach and initiated the most extensive acreage diversion program in U.S. farm program history.

This set the stage for casting the initial debate in terms of a sweeping change in policy direction. Policy suggestions covered most of the ideological spectrum. They ranged from a pure free market approach on one end, to centrally directed mandatory supply control on the other. To the extent any threads of agreement could be identified, they formed around the following assertions:

1. The American farmer was in need of economic help;
2. The cost of farm programs had become exhorbitant and must be reduced;
3. Restoring health to American agriculture required that the United States become more competitive in world markets;
4. Market forces should be more influential in the determination of price support levels and, ultimately, in the determination of market clearing prices.

However, the simultaneous achievement of these objectives and others was clearly going to be difficult, if not impossible. Thus, the number and diversity of proposals offered in papers at conferences and seminars multiplied. Many of them threw conventional program approaches to the wind.

Yes . . . But

The tone began to change in 1984, as the more traditional farmer interests—the general farm organizations and the commodity groups—began developing their organizational positions for the coming debate. It was during this period that most of the established

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farm groups began coming to the conclusion that yes, past farm policy has not functioned very well. But we do not want a reduced role for government in the near-term. Nor do we want major changes in the program tools used by government.

TWO
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There was surprising unanimity within the farm community on this general position, though they differed on the details. Some organizations that had traditionally opposed direct governmental involvement in farm markets came instead to be proponents of such involvement, arguing that such assistance was required, at least for the near-term.

There were other groups outside this camp—some representatives of agribusiness, consumers, and academics—that continued to call for sweeping changes. But these groups have historically exercised limited political influence over the outcome of farm legislation. And, though their influence might have been somewhat enhanced by the unusual circumstances of the mid-1980's, it was unlikely that they would prevail over the farm and commodity groups when push came to shove. Furthermore, many of these interests were internally divided over what position to take.

Thus, by late 1984 those who counted most did not support a major departure from existing policy. The big question at this point related more to the level of price and income support that would be forthcoming than to the choice of programs that would be employed in providing it.

The Deteriorating Farm Economy

In late 1984, it appeared that the Federal cost of the farm programs could be the deciding factor. The Federal deficit was at a record high level and growing. Farm program costs that had average $4 billion during fiscal years 1978-81 had skyrocketed to $18.9 billion by FY 1983, not counting the value of commodities used as payment-in-kind. This level of expenditure was small in relation to a Federal budget of nearly $800 billion. However, the appearance that farm program costs were out of control was cause for alarm.

Concern for the costs of farm programs was a powerful force. However, it proved to be no match for the impact on the debate stemming from the continued deterioration of the farm economy was to have on the course of the debate.

Until mid-1984, the economic problems of agriculture had been viewed by many observers (including many Washington policymakers) as transitory. By late 1984 any basis for optimism was growing faint.

No relief was in sight, despite record high Federal expenditures. Grain stocks were building again and prices were falling. Even though the PIK program of the year before, combined with a Midwest drought, had temporarily deflated feedgrain supplies, creditors were nearing an end of their capacity to stretch out repayment schedules for farmers who were experiencing the greatest financial difficulty. The number of farm foreclosures, though not large in an absolute sense, increased to the point that most farmers were either affected or knew neighbors who were. Furthermore, many of the same lending institutions went too far in helping their farmer borrowers, resulting in their own failure.

Most of the farm input industries—fertilizer, farm machinery, chemicals, seeds—had been badly hurt by the massive idling of acreage in 1983. Plant layoffs were occurring throughout the Midwest. Local businesses came under the same pressure.

By this time, the economic problems of agriculture had attained such a scale that they attracted the attention of the national news media. For a period of 4 to 6 weeks, the "farm crisis" was subjected to saturation coverage. Cover stories by the major papers and the national weeklies. Evening television coverage two or three times per week. All of this helped ensure that the problem was viewed as a national problem with a strong human dimension and not as a sectional economic problem.

Congressional Action

Thus, by the time the 99th Congress convened in January 1985 and began holding hearings, farm policy was headed down a familiar roadway with few exits. Most farm interests were calling for the continued use of current farm policy tools. There was little interest on their part in experimenting with new approaches.

Furthermore, members of Congress from farm districts had just returned from having seen and heard firsthand about the economic problems of farmers and businesses in their districts and states. And those who represented urban constituencies were soon to hear about them through the national media.

Three features of the Congressional situation, more than any others, established the framework for the farm bill debate from this point on. First there was the farm bill proposal submitted by the Administration. Given the vast array of political and analytic resources that the Federal Executive can bring to bear on legislative issues, an Administration has the opportunity to play a pivotal leadership role on most legislative issues if it chooses to do so and exercises its authority wisely.

Of course this can be a big "if." In recent times administrations have been prone to position themselves so far from the mainstream of congressional thinking that they have found themselves observing rather than participating in farm bill deliberations. This happened to some extent in 1977 and 1981 and it happened again in 1985.

The Administration's proposal called for a sharp reduction in producer benefits, with most programs to be phased out over a transition period. This approach was at such extreme variance with the conventional view that it was quickly dismissed by members of Congress from both parties as irrelevant, not to mention political suicide. Thus, the opportunity for the executive to play a unifying role was once again foregone.

A second key determinant was the Senatorial lineup for the 1986 election. Of the 34 incumbent Senators whose terms expire in 1986, 22 are Republican and at least half of these are from states with important agricultural constituencies. With Republican control of the Senate (and the many legislative advantages that accompany that control) presently dependent on a bare 6-seat advantage, much is at stake in this election. And not only are the stakes high for the individual members who will be running, but they are high for the Administration too since its ability to work effectively with Congress after 1986 will depend in no small way on the outcome.

With an important reelection campaign looming, these Republican Senators became acutely sensitive to the near universal condemnation of the Administration's farm policy and the austere course it sought to chart for the future. As a result, most of these Senators quickly distanced themselves from the Administration.

They did this in a variety of ways. Some developed their own farm bill proposals. Others aligned themselves with the Democratic minority. As a result, many features of the bill that were ultimately reported out of the Senate Agriculture Committee were developed by the Democratic members, with the support of dissident Republicans.

The third element that was instrumental in the evolution of the bill flowed from the first two. Having adopted a position that had so little political support on the Hill or among the principal contending interests, the Administration appeared to be headed for a major confrontation with the Congress. It was equally evident that members of the President's own party in the Senate would have to line up against him, not just on farm policy but on many other issues as well.

Thus, the Democratic leadership of the House of Representatives made a tactical decision to allow proceedings in the Senate to proceed in advance of those in the House. House Democrats figured the Republican-led Senate would not deviate far from the Democrats' position. And, of course the Senate Republicans stood a better chance of reaching a compromise with the White House.

Furthermore, if the Senate failed to reach such a compromise, the resulting policies could be laid at the Republican doorstep. But mostly the House leadership was counting on the incentive of reelection to inspire Senate Republicans in their negotiations with the White House. Thus, most of the early action took place in the Senate.

When the Administration failed to offer a satisfactory basis for marking up a farm bill, the Chairmen of both Agriculture Committees introduced draft bills. Both bills would undergo substantial change before being reported out of their respective Committees. This was not to be a year in which a concensus would rapidly form around any one particular measure. Quite the opposite; over a dozen separate measures were offered. The bill that would ultimately be adopted would have to be a composite of many different proposals.

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Perhaps the most critical turning point in the evolution of the bill occurred outside the farm bill debate itself. As noted before, in early 1985 the key unknown affecting the outcome of the debate was how much money the Congress and the President would be willing to spend on farm programs. In effect, this would determine the level of price and income support that would be forthcoming.

There was never much doubt how the majority of members from farm districts would vote on this issue, but what about the far larger number who come from urban and suburban areas? As part of its deliberation over the FY 1986 Budget Resolution, the Senate was forced to address this question. Here too the House had deferred to the Senate, recognizing that a confrontation with the President was all but inevitable.

Following several weeks of debate by the Senate Budget Committee and a number of negotiating sessions with the White House, a budget resolution was agreed to in late July that included a modest reduction in farm program costs for fiscal years 1986-1988. However, in comparison with the budgetary alternatives that had been discussed to this point, the reduction was surprisingly small.

Acceptance of this resolution signaled two important things: (1) That the U.S. Senate (and, therefore, the entire Congress) was extremely reluctant to reduce farm program expenditures in the near future, despite serious problems with the deficit. (2) By agreeing to this resolution, the Administration had abandoned both its farm bill proposal and any hope for realizing major budget savings from the farm programs.

Now that the constraint of budget cost had been largely relaxed, Congress could adopt provisions that satisfied the other objectives around which general agreement had formed.

Most viewed a lowering of price support levels, coupled with expanded funding for various forms of export assistance, as moving the U.S. toward a more competitive position in world trade. Farm income was to be protected from the effect of lower farm prices by substituting higher cash payments for the reduced price support levels.

As a means of giving farm policy a greater market orientation, future price supports were linked to historical price trends. And, in recognition that the current overcapacity problem was likely to remain for some time to come, the authority to idle acreage on a year-to-year basis was supplemented with authority to enroll acreage in a long-term conservation reserve.

Attempts to impose mandatory supply control as a means of protecting farm income were defeated.

Arguments over the period for which cash payments to farmers were to be frozen at present levels were among the bitterest of the debate, but were eventually resolved by splitting-the-difference and adopting a 2-year freeze. Differences between the House and Senate over dairy policy remained to the end but were eventually settled by adopting parts of each approach.

Finally on December 18, 1985, the Congress passed a compromise measure and the bill was sent to the White House where the President signed it a few days later.

Implications of the New Bill

As it has for the past few years, farm policy will play a major role in shaping the farm economy into the foreseeable future. The new farm bill can be expected to move policy in the following directions:

—Lower farm prices. As the levels of price support for the major field crops are reduced for the 1986 crop, followed by a reduction of the milk price support level in early 1987, farm prices will drop rather significantly. Although this alone will not result in a sudden and dramatic reversal in the declining sale of U.S. farm products abroad, it should set the stage for a recovery of market share over the next few years.

—Continued farm income protection. Larger cash payments have been substituted for lower price supports in the new Farm Bill. While these larger payments will not solve the more serious financial problems that now confront many farmers, they will stabilize the situation and help many other farmers avoid slipping into trouble. On balance, the increased cash payments should offset the effects of lower prices, holding cash income near present levels.

—Continued use of acreage diversion. The principal means of holding the supply of farm output in line with demand will continue to be voluntary acreage diversion. Provisions in the new Bill will permit this to be done more efficiently in the future than it has been done in the past, while also placing greater emphasis on conservation objectives.

Unfinished Business

Despite the substantial progress represented by the 1985 Farm Bill, farm policy cannot be considered to have reached any lasting state of equilibrium. Farm bills rarely do settle things for long. And, the situation now is even more uncertain than usual. It is highly uncertain for three principal reasons:

1. The role of farm program administration. Farm bills have traditionally granted the Secretary of Agriculture substantial discretion in the administration of program authorities. There is little choice, after all; commodity programs must be tailored to fit constantly changing circumstances that no legislative body will ever have the foresight to fully anticipate.

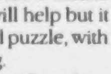
But the 1985 Farm Bill goes somewhat further than past bills in the degree of authority it vests in the Secretary. Thus, the outcome will depend on a number of important administrative decisions, most of which still lie ahead.

2. The farm financial problems remain largely unresolved. At about the same time that the Congress finished work on the Farm Bill, it also approved a measure that will restructure the Farm Credit System and provide a means for Federal assistance to it. This will help but it is only one piece of a complicated puzzle, with several of the pieces still missing.

The painful process of sorting out those borrowers capable of reaching solvency from those who are not and of distributing the losses are tasks that remain largely ahead. Although additional legislation appears likely, most of the sorting out will probably have to take place locally.

3. The problem of the Federal deficit. Most important of all is the problem of the Federal deficit. Though most of the last Session of Congress was devoted to debate over what to do about the deficit, they adjourned just before Christmas with very little to show for their effort. In effect, they deferred taking actions until this year. But eventually the Congress and the President must confront this issue and all the difficult political tradeoffs it entails.

When they do, nearly all aspects of Federal policy, including farm policy, will come under the microscope. Even with an increase in taxes, which now appears likely, most programs will have their budgets cut, some severely. Until these issues are addressed, and particularly the deficit issue, the 1985 Farm Bill must be viewed as a temporary roadmap for U.S. farm policy.



THE FARM AND FOOD SYSTEM IN TRANSITION

Emerging Policy Issues

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Soil Conservation Policy for the Future

Sandra S. Batie
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SOIL CONSERVATION has not always been a matter of U.S. national policy. Prior to the 1930's, the federal government had made a few efforts to inform farmers of the problems associated with soil erosion, for example, through an 1894 United States Department of Agriculture (USDA) bulletin, *Wasted Soils: How to Prevent and Reclaim Them*. Ultimately, however, it took a combination of events to add soil conservation to the national policy agenda. These events were the Great Depression, the severe droughts of the early 1930's, and the presence of a unique spokesman for the soil conservation cause, Hugh Hammond Bennett.

Bennett became convinced of the dangers of soil erosion as early as 1903 when he was mapping soil types for the USDA's Bureau of Chemistry and Soils. While mapping, he came across numerous examples of soil erosion throughout the country. His experience motivated him to lecture extensively about soil erosion problems in order to convince farmers and legislators of the dangers of erosion. Bennett's effort eventually resulted in federal funding for soil erosion research. Stronger legislation soon followed as a result of the Great Depression and the 1930's droughts.

The Great Depression put nearly one-quarter of the labor force out of work at a time when there were no public welfare programs, unemployment insurance policies, or food stamps. The Depression also meant that farmers, faced with high debts and low prices, could not afford to practice soil conservation. In 1933, President Franklin D. Roosevelt requested Congress to authorize $5 million for soil conservation projects, both to combat erosion and to increase employment. Congress did so, under authority of the National Recovery Act of June 16, 1933 (P.L. 73-67).

Then, in 1934, severe droughts hit. Dust storms carried soil from the plowed fields of the Great Plains all the way to the Atlantic Ocean. Although likely an apocryphal claim, it is said that one of these storms rained dust on Washington, D.C., in April 1935, as Congress was considering H.R. 7054, the Soil Conservation Act. The act, which later passed, declared the policy of the U.S. was: ". . . to provide permanently for the control and prevention of soil erosion . . ." The act also established the Soil Conservation Service (SCS) as a permanent agency within the USDA.

The Soil Conservation Act was followed by passage of the Soil Conservation and Domestic Allotment Act of 1936, which provided government payments for farmers who adopted soil conservation practices, primarily to reduce acreages of "soil-depleting" crops. Then in 1937, the Standard State and Soil Conservation District Model Law was formulated with hopes that it would be adopted (in some form) by each state. The model law outlined a process by which local soil conservation districts could be voluntarily established within a state and used to promote soil conservation practices. By 1947, all states had passed soil conservation district enabling laws. Today there are 2,950 soil conservation districts which collectively cover approximately 2.2 billion acres (Dallavalle and Mayer, 1980).

Although various programs were added to those of the 1930's over the next three decades, soil erosion itself aroused little public interest. To most Americans, it seemed that action had been taken to deal effectively with the problem. With the events of the 1970's all this changed.

The 1970's

The 1970's saw the first major interruption of several decades of U.S. agricultural surpluses. Before 1973, U.S. agriculture had excess resources, both in land and in the number of farmers. These resources, coupled with government programs that supported some farm prices above market levels, resulted in substantial annual surpluses of agricultural commodities. In the face of overflowing silos, soil conservation was perceived as an issue of little urgency.

But grain exports increased dramatically in 1973 when the Soviet Union began buying large quantities of foreign grain. Grain exports in 1973 were nearly double those of 1972. The 1974 prices of wheat, soybeans, and corn rose above 1970 prices 208 percent, 133 percent, and 128 percent respectively. The increase in harvested cropland was spectacular and predictable: from 1973 to 1974 there was a net increase of 24 million harvested acres.

The material in this paper is drawn extensively from Soil Erosion: Crisis in America's Croplands, *Sandra Batie, 1983.*

David L. Chicoine, University of Illinois at Urbana-Champaign, and R. Mack Gray, Soil Conservation Service-USDA, contributed reviews of the paper. This is one of a larger set of resource papers sponsored by the Extension Committee on Policy (ECOP), USDA-Extension, Michigan State University Cooperative Extension Service, and the various universities and organizations that supported those who have contributed papers and reviews.

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With agricultural exports considered essential to improving the nation's balance of payments, farmers of the 1970's were encouraged by Secretary of Agriculture Earl Butz to plant "fence row to fence row." And they did. Harvested lands were used more intensively. Pastures were plowed and planted. Marginal agricultural lands were cultivated, often for the first time. From 1967 to 1977, over 2 million acres of newly cultivated cropland came from lands with poor soil.

As farmers plowed under more land to take advantage of rising prices, old conservation practices were lost. Narrow terraces, suitable for the smaller and lighter farm machinery of the 1960's, were plowed out and the contouring of fields was abandoned because of incompatibility with the machinery of the 1970's.

In response to the increased export demands, harvested cropland reached 391 million acres by 1981, up substantially from less than 335 million acres in 1972. Partly as a result of these trends, the quality and quantity of America's croplands became a national concern.

The environmental movement that gained visibility in the 1970's also drew attention to soil erosion. When water quality became a major concern of environmentalists, it was only a matter of time before the demands for cleaner water focused on one of the chief pollutants—soil eroded from agricultural lands. The environmental concerns introduced a new set of soil erosion critics, who questioned the objectives and practices of USDA agencies and soil conservation districts (Unger, 1979).

The Accountability Crunch

In the late 1970's, serious criticisms of the nation's soil conservation programs began to emerge. After being in operation for almost 50 years, public programs addressing soil erosion were accused of being ineffective and expensive. Some critics even charged that soil erosion was worse than it had been before the programs were initiated (Barlow, 1979).

In 1977, the comptroller general of the U.S. prepared a General Accounting Office (GAO) report for the Congress entitled *To Protect Tomorrow's Food Supply Soil Conservation Needs Priority Attention*. The GAO visited 283 farms throughout the nation and found that 84 percent of these farms were suffering annual soil losses above the levels regarded as allowable for sustained productivity (U.S. Comptroller General, 1977).

After 50 years of use, why were the public programs found so ineffective? The reasons are complex but informative. One reason is that conservation, like housekeeping or yardwork, is a continuing process. To be effective, some conservation practices must be maintained on a continuing basis. Thus as the number and location of cropland acres changed over the decades, and as crop technology changed, new conservation efforts were needed despite large conservation expenditures made in the past.

A second reason is that past soil conservation programs were not targeted to fund the most assistance where conservation practices would be the most effective. This resulted, in part, from the 1930's philosophy of supporting farm income via soil conservation programs but it probably continued as a result of the pressures under which the SCS and the ASCS operate. Both agencies need the popular support of farmers and thus have considerable incentive to spread program benefits widely. Thus the eligibility criteria of the programs were not related to erosion rates. Even if program managers had attempted to focus assistance on farms with the greatest erosion problems, the lack of data on the nature and extent of soil erosion would have limited their ability to do so.

Factors Influencing the Adoption of Conservation Practices

But why do farmers not implement soil conservation independently of government programs? A major reason is that many conservation practices do not pay for themselves. However, this is not because the practices are ineffective. Farmers can choose among many soil conservation techniques such as changing the characteristics of a field's topography with terraces, planting only the least erosive lands, rotating crops, strip cropping,* planting on the contour, retaining crop residues on the field surface after harvesting, constructing waterways, or using conservation tillage methods such as no till.** Alone or in combination these techniques can reduce erosion rates 60 to 95 percent.

Many of these techniques are not profitable, however, and a business-minded farmer who must remain competitive to remain in farming is simply not interested in such practices if they do not pay. Even a farmer with a strong land ethic and a desire to practice soil conservation may find it financially impossible to do so. There are other reasons why farmers do not adopt soil conservation practices. Some barriers are raised by the investment incentives in rising land prices, land tenure arrangements, and tax policies. Some simply stem from a farmer's preferences and beliefs.

Costs of Conservation Practices

Practicing conservation involves changes, all of which have costs. No till cropping, for example, may require the purchase of new equipment and will probably require more agricultural chemicals than other kinds of cropping. Elimination of fall plowing means that a farmer must spend more time preparing for planting in the spring when time is very valuable. Adding forage crops as part of a conservation plan usually means adding livestock. Doing so requires fences, specialized equipment, and local markets for feed, antibiotics, veterinary care, and other inputs.

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*Strip cropping involves growing crops in a systematic arrangement of strips or bands that serve to catch field erosion.

**No till eliminates almost all tillage. There is no seedbed preparation before planting. Usually residue cover is retained and cut through only to plant the seeds. Chemicals, rather than conventional plowing, are used to control the weeds.

Also, farmers buy and own farms—not fields. If part of a farm includes inferior, more erodible soil classes which are surrounded by better soils, the farmer may find it uneconomical, as well as inconvenient, to treat the more erosive lands differently. If the farm is being used to grow corn and soybeans, for example, the farmer will not normally find it practical to deal with an "island" of erosive soil by fencing it and using it for livestock, or by sowing different crops on it or letting it lie idle. Ownership boundary lines can also interfere with contouring or terracing.

For the business-minded farmer, a decision to maintain, improve, or deplete soil is an investment decision. For some tracts of land, conservation may be economical for the farmer when the land is first cultivated. This might be true on land that is fairly flat, where the topsoil is shallow but highly productive and the subsoil is of substantially poorer quality. In this situation, the loss of an inch of topsoil could reduce yields dramatically; erosion could be reduced inexpensively if, for example, contour plowing or residue retention were used.

On other tracts of land, where conservation requires major land-moving technologies to form terraces, and where straight-row, highly erosive cropping patterns can bring a high dollar return, private economics may dictate mining the soil. This is particularly true where the original topsoil is very deep. Also, when erosion problems are mainly off-farm, such as reduced nearby water quality, farmers have little incentive to conserve.

Other financial factors also influence the farmer's decision about whether to conserve soil. For example, the lower the price of soil substitutes such as fertilizers, the less likely the farmer is to conserve. Also, the lower a farmer's current net income, the less likely he or she is to conserve, since substituting future income for present income is financially impossible.

While the majority of conclusions from research studies state that most soil conservation practices are not economical investments for farmers, there are exceptions. Such exceptions appear to be conservation tillage, contour plowing, and leaving residue on the field after harvest. In some areas of the nation, these practices are effective in reducing erosion and may even increase profits.

Personal Preferences

Reasons other than the possible high costs involved often influence decisions about conservation. Many farmers just do not perceive the same need for soil erosion control as do soil conservation specialists. Several researchers have found that failure to see the need for erosion control practices was a significant factor in explaining the failure to adopt them. In one survey in Nebraska, "the SCS classified 82 percent of the farms as having a major soil erosion problem while only 2 percent of the operators and none of the landlords classified their farms similarly. Moreover, 54 percent of the operators and 55 percent of the landlords indicated either no or few erosion problems; yet SCS classified only 4 percent as having no problem" (Hoover and Wiitala, 1980).

The authors of the study suggest that the different perceptions come partially from different perspectives. "SCS classifies soil erosion problems in terms of the amount of soil movement. Operators are more likely to classify problems in terms of the difficulties caused by soil erosion, the visibility of soil movement and the short-run effect of erosion on the economic, physical and operational aspects of farming" (Hoover and Wiitala, 1980). In general, a greater proportion of the younger operators agreed with SCS advice than did older operators.

Other factors also inhibit conservation practices. Some farmers want clean fields and straight rows no matter what advice they are given. Others have little confidence in the effectiveness of the soil conservation practices being recommended and therefore do not adopt them. Still others dislike government involvement and requirements. Also farmers have differing backgrounds, educations, experiences, managerial skills, planning horizons, and attitudes toward risk taking. All of these factors substantially influence a farmer's willingness to adopt soil conservation practices (Nowak and Korshing, 1981).

Land As An Investment

Decisions about soil conservation are complicated by the multiple reasons that exist for owning farmland. Production of food and fiber is only one. Investment is another. Investment in cropland has been an excellent inflation hedge. One study found that over half of the benefit from owning farmland in the years from 1920 to 1978 resulted not from what the land produced but rather from what it contributed to increases in the owner's net worth (Castle and Hoch, 1982). But the result of using land as an inflation hedge is often increased soil erosion.

> Since the mid-1970's we have had a tremendous increase in the price of land and the cost of farm equipment. So we now have farmers who look upon farming as a real estate game. They buy the land and farm the hell out of it to meet their heavy payments, not worrying about preserving it because they believe it will keep going up in price . . . . It's like buying a rundown building in New York City and letting it deteriorate still further, knowing you'll still have the capital value in the end (Crittenden, 1980, quoting Earl Heady).

Tenure Arrangements

Insecure property rights also work against soil conservation efforts. If a farmer cannot capture the future gains that arise from conservation decisions, he or she will have no incentive to conserve. Thus if a farmer expects either to sell the farm shortly or to have the lease cancelled, that farmer has little reason to begin conserving. Leasing arrangements also may lessen conservation incentives. Former Secretary of Agriculture Bob Berglund claimed that, "Our biggest problem is persuading absentee landlords to plow some of their earnings back into the soil" (Crittenden, 1980).

Tax Policies

Tax policies can also encourage soil-depleting practices, even though such impacts are often unintended. Major influences leading to soil depletion are the tax advantages that encourage farmland speculation: deductibility of interest on borrowed funds as a business expense, investment tax credit, several methods of computing accelerated depreciation, and the treatment of any capital gains.

> The existence of a preferential capital gains tax in this market draws capital into real estate, not by the promise of higher earnings but by the promise of greater value retention. This distorts investment patterns, displaces operators whose focus must be on income flow rather than on net worth, and encourages patterns of land use that will minimize supervisory cost while waiting for land value to rise (Raup, 1980).

Soil Erosion and the Future

The social significance of farmers' failure to conserve soil depends on the impact of soil erosion on both environmental quality and future harvests. It is extremely difficult to quantify the effect of soil erosion on air and water quality, but there is a relationship. Runoff from farmland carries sediment, pesticides, and nutrients, all of which are considered pollutants when found in excess. Sediment can reduce the lifetime of lakes and increase dredging costs. Excessive nutrients can lead to eutrophication of water bodies; excessive pesticides can be harmful to fish and wildlife. Air quality can similarly be diminished by excessive amounts of dust. Still, a reliable measure of these damages is not available.

There is more research with respect to the effect of soil erosion on future productivity. Such studies have shown that on many soils a relationship exists between soil erosion and reduced yields. The ultimate effect of erosion on yields differ by soil type, by crop, and by management practices. In some soils, farmers can improve their yields and compensate for the effects of erosion with the increased use of fertilizers, improved plant varieties, or various farming techniques.[*] "Historically, the positive effects of [these] technological change[s] on productivity have outweighed the negative effects of erosion" (Crosson, 1982).

Some agricultural researchers fear that the rate of such production increases will slow in the near future. For one thing, inexpensive energy and plentiful water seem to be things of the past, and new avenues of inexpensive growth are not readily apparent. For another, it appears that the growth of agricultural productivity has already slowed. The average rate of change in total productivity declined from 2.2 percent annually during the 1950-65 period to 1.8 percent annually during 1965-79.

Some experts fear that cropland productivity growth will remain slow because of insufficient funding for research. They cite the large contribution that investment in research and education has made to U.S. agricultural productivity growth in the past, and they are disturbed about the lack of growth in government funding. If these researchers are right, greater demand for food and feed grains may be met only by greater use of inputs, including land.

Unless new technologies that can once again boost yields per acre are developed, technologically induced changes can no longer be counted on to substitute completely for the natural productivity of the land. The effects of soil erosion on yields will then become more evident in those areas with little topsoil remaining. The actual significance of any reductions in yields will depend on future demands for U.S. agricultural products.

There are, however, experts who are optimistic about developing new technologies for the enhancement of agricultural productivity, including those no longer dependent on inexpensive water, energy, or land. Many of these anticipated breakthroughs will come, they envision, from the biological sciences and plant and animal genetic research. If their predictions are accurate, present erosion rates will result in a far lower future productivity "price to pay" than if the more pessimistic visions of the future prove true.

The Shape of Conservation Policy

Much uncertainty remains about the importance of soil erosion to future food and fiber production, but it is precisely this uncertainty that makes the case for public concern and public action: "In the absence of good information we should be cautious with our limited soil resources" (Libby, 1982). The policy dilemma is both to protect air and water quality and to preserve the option to use more soil in the future, while at the same time not to be overly conservative. Soil conservation is not costless any more than is soil erosion, and to spend too much on erosion control or to spend dollars inefficiently is to deprive society of other valued goods such as schools, roads, or aid to the destitute.

The uncertainties surrounding soil conservation choices make the policy choice more one of providing insurance against the worst case possible than of selecting an "optimal" policy. Deciding how much of a premium to pay for this insurance or how to use that premium in a most cost-effective manner is not easy. Nevertheless, the worst case future that might result from inaction is sobering and that suggests that there is wisdom in making some sacrifices today to insure against such a future becoming a reality.

There is a substantial data base with which to analyze the effectiveness of past soil conservation programs. This data base is augmented by research findings generated or compiled as a result of soil conservation's new visibility on the public agenda. Although there are numerous policy and technical questions yet to be answered, what has been learned to date can serve as a catalyst for genuinely improving soil conservation programs.

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[*] If erosion has reduced the water-holding capacity of the soil, the rooting depth, or the water infiltration rate, however, the addition of fertilizers may not offset the yield-reducing effects of erosion (Shrader and Langdale, 1979).

In the light of these data, some strategies seem to have considerable potential for reducing erosion problems in a cost-effective manner. They include targeting of conservation efforts; removing the most erosive lands from crop production; encouraging or requiring farmers to adopt low-cost conservation practices, such as reduced tillage, residue retention, and contour plowing; and employing some cross-compliance strategies. Other insurance investments include funding research designed to reduce the difficulties of adopting conservation practices (for example, improved weed control with conservation tillage) and to reduce the need for land as well through improving yields per acre. Many of these strategies have the advantage of preventing erosion before it begins rather than restoring damages caused by erosion after the fact.

Targeting

Targeting is the selection of certain regions and of areas within such regions to receive most of the publicly funded conservation investments. Since most sheet and rill erosion occurs on only a small proportion of the nation's total cropland acreage, targeting can be a reasonably cost-effective way to reduce erosion. Almost 70 percent of the nation's erosion exceeding 5 tons per acre per year occurs on less than 8.6 percent of the nation's total acreage (Ogg and Miller, 1981).

Despite this concentration of erosion problems, past cost-sharing programs have dispersed assistance widely. Less than 19 percent of the soil conservation practices installed so far have been placed on the most erosive lands. Over half of the cost-shared practices have been placed on lands with erosion rates of less than 5 tons per acre per year (USDA, 1981). Policies could be made more cost-effective if this pattern were changed and if public programs were directed at farmers whose lands account for the lion's share of erosion problems.

Targeting dollars to areas of greater erosion potential, however, should not mean that *every* highly eroding area is protected or reclaimed. Some areas are so severely eroded that thousands of dollars per acre could be spent with little improvement in the land's productivity. The relative benefits to be gained should be balanced against the costs if truly cost-effective strategies are to be developed.

One problem with targeting is that of establishing criteria for selecting areas. If maintaining soil productivity is the primary objective, then it may make sense to target those areas with fertile but shallow topsoils, regardless of erosion rates. If water quality goals are primary objectives, then targeting might be focused on areas with high erosion rates regardless of topsoil depth.

Another issue to be resolved concerning targeting is that of equitable distribution of public assistance. If public subsidies in the form of cost-sharing are given to the farmers with the most severe erosion problems, is past "poor" soil stewardship being rewarded and "good" stewardship slighted? It would appear that, unless they are carefully designed, the conservation incentives of such a program could result in poor use of the soil.

Removing the Most Erosive Lands

Removing the worst of the highly erosive lands from soybean or grain production is another possibility.

> The evidence strongly suggests that it is not possible to cultivate inherently erosive land and hold erosion to predetermined levels even by using multiple erosion control practices. Yet this land is responsible for the bulk of the erosion problem. Unfortunately, current programs attempt to reduce erosion to 5 tons per acre while land remains in cultivation—an unrealistic objective that is used to justify bureaucratic programs that consume far too many resources for the amount of soil they save (Miller, 1981).

These highly eroding lands are often not very productive. For example, 35 percent of all erosion in western Tennessee is estimated to occur on 15 percent of the cropland which produces only 7 percent of total agricultural production in Tennessee (Parkins, 1979).

Arguing for a removal policy assumes, however, that the benefits to be gained in improving water quality and in using the land for crop alternatives, such as pasture and forest, are considered worth the loss of these lands for crops. Lands can be removed from crop production by outright purchase or purchased easements, long-term rental arrangements, zoning for types of agricultural use, or mandatory regulations. Each of these suggested policies has drawbacks, not the least of which can be high enforcement costs to ensure farmer compliance.

Adopting Low Cost Conservation Practices

While regulation to achieve soil conservation and water quality goals is certainly a viable option—and one which is being used in several places—acceptance of it is not widespread. Although soil conservation and water quality protection are widely held public objectives, so, too, is the protection of private property rights. As in the case of many resource issues, two widely shared objectives are in conflict.

However the regulatory approach has passed at least one constitutional test (in Iowa), and its acceptability would probably improve if farmers were guaranteed financial assistance to cover the costs of complying with a regulated conservation standard. Perhaps, also, regulations could be directed only toward those farmers with the greater erosion rates. Since minimum tillage, residue retention, and contour-plowing practices can be economical investments in many situations, farmers could be required to adopt such low cost techniques with little negative effect on incomes and considerable reduction in soil losses.

Instead of regulation, public cost-sharing of conservation practices might be used to encourage farmers to adopt low cost practices. Cost-sharing arrangements have the distinct advantage of being easily designated for particular areas and for particular conservation practices. Short-term agreements can give a farmer the needed incentive and financing to implement practices. Long-term agreements help to assure some longevity for any adopted practices.

Cross-compliance Strategies

Cross-compliance strategies are incentive programs. The farmer receives extra benefits from other agricultural programs for adopting soil conservation practices or loses benefits for not adopting them. For example, in what has been termed the "green ticket" approach, farmers might receive higher price support payments for their crops if they participated in soil conservation programs. In a "red ticket" approach, farmers who did not participate would lose out on specific federal program benefits.

If cross-compliance is linked to price support or other commodity programs, and if these programs are inactive in times of high food demand, then cross-compliance strategies will not be effective unless long-term benefits are included. For example, farmers might cross-comply to be eligible for *future* program benefits as opposed to *present* ones.

While most discussions of cross-compliance focus on price support and production adjustment programs, numerous other programs could be considered cross-compliance candidates. Loan and credit programs are examples. In order to obtain a loan at a reduced interest rate, a farmer would have to be in compliance with a soil conservation plan or would have to implement those conservation practices which are relatively low cost, such as retention of residue. Other candidates include disaster and crop insurance programs and state use-value assessment programs, in which farmers are taxed on the agricultural value of their land rather than on its market value.

For cross-compliance to reduce soil erosion effectively, participating farmers would need not only to receive positive net benefits, but they would also have to be those farmers whose lands are seriously eroded. Two likely program candidates for cross-compliance are the price support and acreage diversion programs. Participation in these commodity programs is not evenly spread across the nation, however. Thus cross-compliance linked to these programs would have considerably more impact in some states than in others. Texas, for example, has much of its acreage in corn and cotton, both of which have strong commodity programs. On the other hand, West Tennessee, like many other regions in the upper Mississippi Valley, has a substantial amount of land in soybeans for which few commodity programs exist. Hence cross-compliance strategies tied to existing commodity programs will favor Texas over Tennessee and other upper Mississippi Valley states (Clayton and Ogg, 1982).

Research

Other techniques involve increased research. Some research programs will be undertaken by private firms; however, many will need to come from universities. This will require both an infusion of new funds and the assurance of continuity of research funding. Research results that improve the productivity of inputs may reduce the amounts of croplands devoted to growing grains and soybeans. For example, developing higher-yielding plants could reduce the amount of land required to meet a given demand; improving the efficiency of the food-processing-and-marketing sector to reduce loss and spoilage would be equivalent to increasing yields per acre; developing better weed control for minimum tillage would make conservation tillage techniques more profitable. Other needed research efforts include those designed to reduce uncertainty about the impact of soil erosion on productivity and water quality and those which provide information for improving soil conservation policies and encouraging the adoption of soil conservation practices. Examples include analyses of the impacts of implementing the various targeting or cross-compliance proposals.*

Other Techniques

Other possibilities are more controversial. Reducing food and fiber exports to other nations and improving other countries' capacities for food production with appropriate technology transfers and aid programs would remove some of the pressure from American lands. Shifting consumer demand away from grain-fed animals, especially beef, would cut down on acreage used in the more erosive crops of corn and soybeans.

Present Policy Directions

Some of these possible strategies have been encompassed in recent USDA agency planning. In December of 1982, the Secretary of Agriculture presented to Congress a ***Program Report and Environmental Impact Statement*** in response to the provisions of the Soil and Water Resources Conservation Act of 1977 (USDA, 1982). As part of the final report, the secretary expressed his intent to redirect USDA activities, to target 25 percent of conservation technical and financial assistance, and to consider matching state and local funds by awarding grants to those Soil Conservation Districts experiencing severe erosion problems. The report also details the USDA's intent to request conservation plans from farmers applying for some Farmer's Home Administration loans, to emphasize conservation tillage, to resolve inconsistencies in various agency programs, to increase the use of long-term agreements with farmers, and to set up pilot projects to test new approaches for dealing with soil erosion problems. Thus it appears that the USDA will redirect some of its current programs to yield more soil retention or improved water quality per conservation dollar spent.

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*See W. E. Larson et al. (1981) for a careful discussion of soil conservation research priorities for the nation.

In the near future, though, increased funding for conservation programs is not likely, and some of the changes proposed by the Secretary of Agriculture will encounter considerable opposition both from within and without USDA (Batie, 1983). Furthermore, the recent return to large crop surpluses means that policymakers will probably not make conservation a high priority. It is difficult to argue for soil conservation to protect future productivity when silos are overflowing with grain. (However, a cogent argument can be made for conservation to improve water quality regardless of surplus crop conditions.) Also, while the current crop reduction programs should reduce erosion as acres are temporarily removed from crop production, these effects will be short-lived when crop prices rise. When this happens, farmers will once again plant their retired acres in crops and increased erosion will result. Yet a prudent policy stance is not to adopt conservation only when it is convenient to do so. An improved soil conservation policy which provides incentives to conserve soil in all crop years (with the possible exception of years of extreme food shortages) is yet to be designed. While the preferred program of the USDA Secretary does have elements that move federal policy in this direction and is an impressive contribution to soil conservation given today's political and financial constraints, a policy that will truly provide cost-effective incentives for long-term conservation is still evolving.

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Executive Summary

Excerpted from: Summary: Needs Assessment for the Food and Agricultural Sciences; a Report to Congress from the Secretary of Agriculture [by the] Joint Council on Food and Agricultural Sciences. [Washington] G.P.O., 1984. p. v-viii.

The success of American agriculture is widely recognized. It has a tremendous capacity to produce and its production is highly efficient. Collectively, the food, fiber, and forest industries represent a major national asset in terms of world trade, international security, and domestic stability. Our Nation can reasonably expect an assured and reliable supply of agricultural and forestry products now and in the foreseeable future. The policy of providing public support for agricultural research and education underlies the current ability of U.S. producers to compete in world markets and to provide American consumers with high-quality and reasonably priced food, clothing, and shelter. However, past achievements will not automatically assure continued growth in productivity and industry well-being. Vast changes are underway that require a new technological base for agriculture.

- Past productivity improvements resulted from relatively low-priced land, water, fuel, chemical, and capital inputs. Since costs of these inputs have risen substantially, and will undoubtedly continue to rise, *alternate production technologies must be developed* to keep food, fiber, and forest product prices in line with past and current relative levels.

- Science has demonstrated a capability to *understand and fundamentally alter the processes of living cells.* These new abilities, along with other advances in such areas as microculture, cell fusion, regeneration of plants from single cells, and embryo recovery and transfer, are creating vast new opportunities all across the agricultural sciences.

- Advancements in *computer technology* enhance the computer's usefulness in analysis and transfer of information. The American agricultural system has long known that ready access to the right information at the right time is the key to success in managing inputs, production, marketing and distribution, and consumption of food, fiber, and forest products.

- There are increasing concerns about the *continued availability of the soil and water resource base.* Improved resource-saving technologies must be incorporated into our current production technologies.

- Modern agriculture depends heavily on chemicals. *The challenge is to develop chemical systems which are more highly targeted to their beneficial consequences* and which cause fewer environmental hazards.

- There is increased public awareness of the relationship between *personal well-being and diet.* Changing life styles and the increasing average age of U.S. citizens have led to questions about our nutritional needs.

The team leader for this report was Paul F. O'Connell, Forestry Service, U.S. Department of Agriculture.

- United States agriculture is becoming more *interdependent with domestic and world credit, trade, and exchange rate policies.* What national policy options can best cope with market variations (plus weather uncertainties) and also address needs of family farms, natural resource issues, and concerns of the taxpaying public?

To maintain the preeminence of United States agriculture, we must address these opportunities and issues. A critical element in meeting these challenges is *the ability of the agricultural science and education system to attract and/or train scientists and specialists with the needed skills,* e.g., molecular genetics, human nutrition, soil and water sciences, international marketing, systems analysis, and agricultural engineering.

Areas of concern include:

- Salary levels and promotion opportunities in the USDA/state system make it very difficult to retain highly qualified people in the high-tech fields.
- Graduate and undergraduate education programs are not attracting sufficient numbers of students in the critical fields.
- The average age of scientists is increasing. The formal education of many scientists is now 20 to 30 years old.

The technology development process must continue to consider *the incentives of final users.* Before new or existing techniques are adopted by an owner, manager, or consumer, many questions need answers. Will an alternative approach be more cost-effective? Can the farmer afford the additional cost when the prices of wheat, corn, or stumpage are so variable? What financial plan best fits a given farm or household? The unique aspect of agriculture is the *extension education process.* State specialists and county agents who interact regularly with the researchers also have the trust and understanding of producers and consumers. They take available research data from multiple sources and develop educational packages that consider the needs of users.

Demand-Supply Projections

At real prices approximating those of 1979-81, *effective global demand* (consumption) for agricultural and forest products is projected to expand substantially by 2000, primarily as a result of population and economic growth—about 60 percent for income-sensitive commodities such as meat, oilseeds, and processed forest products; close to 50 percent for cereal grains; and 35 to 40 percent for milk and natural fibers. By 2020, effective demand could more than double for income-sensitive commodities and could increase as much as 90 percent for cereal grains.

Output of U.S. agricultural and forest products increased nearly 40 percent in the past two decades. By 2000, production of cereal grains, oilseeds, and forest products will need to increase another 30 to 40 percent and that of other major products perhaps 20 percent. By 2020, needed production of major crops may be 70 to 100 percent above that of recent years to meet projected growth in demand from domestic and foreign markets.

For the remainder of this century and into the 21st century, the growth in demand for U.S. grains, oilseeds, and cotton will derive primarily from expansion of foreign demand. Currently (1982 figures), the United States imports about the same volume of wood products as it exports—$8.4 billion of imports versus $7.2 billion of exports. Current projections suggest little change in this position, so most growth in demand will be from domestic markets. However, the United States has a great opportunity to expand its export of forest products because: 1) world demand for paper and solid products is expected to grow, 2) many established wood-producing nations are confronted with diminished supplies; and 3) the United States has an abundant wood resource and a well-developed wood industry infrastructure. Growth in demand for meat and milk will be largely in domestic markets.

By 2000, close to 60 percent of the total consumption of U.S. cotton and soybeans and 40 percent of the consumption of cereal grains will be in foreign markets. Although projected increases in export demand are substantial—64 percent for oilseeds, 53 percent for cereals, 43 percent for cotton lint—growth rates will be well below those of the 1970's when exports of cereal grains tripled and those of oilseeds and cotton doubled. The result of these developments will be twofold: U.S. agriculture will become increasingly cash crop dependent and increasingly export dependent.

Role of Science and Education

Expanding productive capacity to permit a near doubling of output by 2020 *without major increases in real prices of food, fiber, and forest products* will require major public and private investments in science and education. New and improved technologies and better management systems will be needed to maintain and enhance resource productivity. Without continued growth in total factor productivity, there would be increased pressures on the natural resource base, increasingly serious environmental problems, and ultimately, higher real costs for food, fiber, and forest products.

- Increased production can occur without depleting the soil and water resource base if appropriate conservation practices and economic incentives can be more closely intertwined. A few possibilities include improvements in conservation tillage systems and better understanding of water stresses for both irrigated and dryland agriculture.

- The United States is rich in forests and related renewable natural resources. Intensive forest plantation management and use of alternative utilization technologies can satisfy an expanding domestic market and lead to improved world trade in forest products.

- Range resources in the United States cover enormous acreages, and have the potential for contributing much more to the economic and social well-being of the Nation. Grazing practices, range conditions, and wildlife habitats can be upgraded through improved understanding of range ecosystems.

- For both crop and animal agriculture there is a critical need to improve production efficiency. For crops, this includes enhanced genetic potential and improved yields in unfavorable environments. In animals, it involves improvements in animal feeding practices, genetic quality of stock, and animal health. Traditional technologies and new biotechnology techniques will both be explored in the pursuit of this goal.

- Post-harvest activities represent major portions of the retail cost of food, clothing, and shelter. In cooperation with the private sector, opportunities to improve transportation, processing, and packaging efficiencies need investigation.

- Policy issues needing study and clarification include: 1) the position of U.S. agriculture in the world economy; 2) effects of recent developments on size, cost, and asset distribution of farms; and 3) the role of the federal government in the domestic agricultural economy.

Future public investments in agricultural research and education should be based on more than generating technology *per se* or a simple multiplication of product output. Emphasis will be needed on the development and transfer of socially appropriate technologies that take into account not only agricultural and forest product needs but also goals concerning environmental quality; youth, family, and community development; human health and nutrition; and other sometimes competing social goals. In addition to investments in the physical and biological sciences, investments will be needed to enhance the effectiveness of institutions. The use of human development techniques and social science research can improve understanding of both human and institutional behavior.

To continue addressing the needs of U.S. agriculture, the science and education system needs to continually update and revitalize itself. It must train future scientists and managers, maintain and improve the knowledge base, have the necessary equipment and facilities, and take advantage of the new computerized information and analytical systems. It is important to remember that tomorrow's gain in scientific agriculture has its foundations in the healthiness and vitality of today's science and education community.

WHAT AGRICULTURAL POLICY WOULD BEST SERVE THE ECONOMIC INTERESTS OF THE UNITED STATES?

An Annotated Bibliography on the 1986-1987 National High School Debate Topic

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April 1, 1986

INTRODUCTION

This annotated bibliography lists books, articles, and Government documents. Most of the citations were obtained from the Congressional Research Service Bibliographic Data Base, created and maintained by the Library Services Division of CRS. Other material was selected from collections within the Congressional Research Service and elsewhere in the Library of Congress.

As indicated in the annotations, selected items in this bibliography are excerpted or reprinted in full in the foregoing pages. Other documents described in the bibliography may be located at local public, research, or depository libraries. The Congressional Research Service cannot provide debaters with copies of the items.

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I. BACKGROUND ON U.S. AGRICULTURE AND AGRICULTURAL POLICY

Adkins, Lynn. Farm policy crisis. Dun's business month, v. 123, Jan. 1984: 44-45, 48-49, 52.
"The current programs are costing $28 billion annually and farm income is down." Article explores "the many and varied proposals in the great farm policy debate [which] boil down to two basic approaches: a more-or-less free-market system and programs for income support and price stability." Includes views of four former Secretaries of Agriculture.

Agricultural-food policy review: commodity program perspectives. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1985. 255 p.
"This collection of articles provides background information on the economic setting facing agriculture, the changing profile of the farm sector, the programs that have accompanied its development, and what they have achieved.
Contents.--Part I: Historical overview of U.S. agricultural policies and programs.--U.S. agriculture and the macroeconomy.--Profile of the U.S. farm sector.--The implications of emerging technologies for farm programs. --World agricultural markets and U.S. Farm Policy.--Part II: Commodity price and income support policies in perspective.--Effectiveness of acreage reduction programs.--Agricultural export programs and U.S. Agricultural Policy.--Resource conservation programs in the farm policy arena.--Part III: Alternative tools and concepts.--Toward a broader agenda.
Excerpted in this volume.

Agricultural statistics 1984. Prepared by the U.S. Dept. of Agriculture. Washington, The Dept. [for sale by the Supt. of Docs., G.P.O.] 1985. 558 p.
"Agricultural Statistics is published each year to meet the diverse need for a reliable reference book on agricultural productivity, supplies, consumption, facilities, costs, and returns."

Agriculture in the future: an outlook for the 1980's and beyond. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1984. 62 p. (Agriculture information bulletin no. 484)
"This report, which broadly assumes continuation of current programs and policies, highlights some of the agricultural developments on the horizon that policymakers will need to take into account." Among the topics addressed are global agricultural demand and the impacts new technologies may have on agricultural productivity. In addition, "prospects for 14 U.S. price-supported commodities [wheat, rice, corn, sorghum, barley, oats, soybeans, peanuts, dairy, cotton, wool and mohair, sugar, honey, and tobacco] are examined in greater detail along with the outlook for meat."

Agriculture overview: U.S. food/agriculture in a volatile world economy. Washington, G.A.O., 1985. 46 p.
"GAO/RCED-86-3BR"
Partial contents.--Why is food/agriculture important?--How has the U.S. food/agricultural sector changed?--Food/agricultural programs.--Current situation.--Issues facing food/agricultural policymakers.

Agriculture policy: special issue. Financier, v. 8, Feb. 1984: whole issue.
Contributors are J. Berry and F. Cairncross, economics reporters; T. Foley, Congressman and Vice Chairman of the House Committee on Agriculture; R. Mahoney, president of Monsanto; J. Eiszner, president of CRC International; W. Rappleye, Jr., editor of Financier; T. Urban, president of Pioneer International Hi-Bred, Inc.; M. Sosland, editor of Milling and Baking News; D. Durenburger, Senator; and O. Freeman, former Secretary of Agriculture.

Agriculture 2000: a look at the future: a study by Columbus Division, Battelle Memorial Institute; sponsored by the Production Credit Associations on their 50th anniversary. Columbus, Battelle Press, c1983. 183 p.

"Agriculture 2000 was written for farmers, ranchers, agribusiness leaders, businessmen, high school agriculture students, and other members of the general public who want to know more about the future of U.S. agrculture."

Contents.--Part 1: Trends in agriculture.--Current agricultural trends.--Regional agricultural characteristics.--Developing agricultural characteristics.--Developing agricultural technologies.--Marketing.--Agricultural inputs and finance.--Quality of rural life in the year 2000.--Part 2: Research and technological development.--Crop technologies.--Mechanization technologies.--Technologies in animal agriculture.--Communications and information management.

Agriculture, stability, and growth: toward a cooperative approach; reports from a public policy study of the Curry Foundation. Port Washington, N.Y., Associated Faculty Press, 1984. 240 p.

Contents.--World market trends and prospects: implications for U.S. agricultural policy, by P. O'Brien.--Prospects for integrating the trade strategies of agricultural exporting nations, by J. Schnittker.--Domestic policy options for the future of U.S. agriculture, by B. Gardner.--U.S. agriculture and Third World development: harmonies or disharmonies of interest? by R. Paarlberg.--Overview: deliberations thus far, by D. Paarlberg.--An overview for discussion, by H. Hjort.--Future directions for U.S. agricultural policy, by M. Abel and L. Daft.

Belsie, Laurent. Troubled times for Midwestern farmers. Christian Science monitor, Feb. 11, 1985, p. 3, 4; Feb. 12, p. 3, 4; Feb. 13, p. 3, 6; Feb. 14, p. 3, 4; Feb. 15, p. 3, 6-7.

Contents.--The credit crunch.--Impact of technology.--The international challenge.--Genesis of U.S. farm policy.--Future policy directions.

Bowers, Douglas E., Wayne Rasmussen, and Gladys L. Baker. History of agricultural price-support and adjustment programs 1933-84. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1984. (Agriculture information bulletin no. 485)

"The U.S. Department of Agriculture's concern with price-support and adjustment legislation is carried out under a series of interrelated laws passed by Congress from 1933 and 1984. Beginning with the major proposals of the 1920s for handling and marketing farm surpluses, this history records the establishment of price-support and adjustment programs with the Federal Farm Board in 1929 and the Agricultural Adjustment Acts of 1933 and 1938, and then traces their evolution through 1984. This half century of development is important because it forms the foundation for implementing current and future farm legislation."

The Changing face of agriculture. Wall Street journal, Nov. 9, 1984, p. 1, 22; Nov. 13, p. 1, 19; Nov. 15, p. 1, 22; Nov. 16, p. 1, 23; Nov. 21, p. 1, 26; Nov. 23, p. 1, 9.

This series describes how agriculture in the U.S. is being restructured as the proportion of middle-sized farms decreases, the farm recession continues, high technology becomes more important, foreign competition increases, rural communities shrink, and agricultural research becomes controversial. The concluding article discusses the 1985 farm bill debate.

DeAre, Karen, and Judith Z. Kalbacher. Farm population of the United States, 1984. Washington, G.P.O., 1985. 31 p. (Current population reports. Farm population, Series P-27, no. 58)

Presents data on the farm population by regional distribution, age, race, sex, income, employment characteristics and other factors. Finds that 1 of every 41 persons, or 2.4 percent of the Nation's population lived on a farm in 1984.

Dentzer, Susan. Bitter harvest. Newsweek, v. 105, Feb. 18, 1985: 52-56, 58-60.

Describes U.S. agriculture, "an industry suffering the afflictions of Job--drought, ruinously high debts, foreclosure and now the prospect of much-reduced federal aid." Sidebar articles discuss uprooted families, Sec. Block's bankrupt business associate, and a prosperous California vegetable farm.

Easterbrook, Gregg. Making sense of agriculture. Atlantic monthly, v. 256, July 1985: 63-78.

Presents a revisionist view of farm policy, discussing issues such as agricultural surpluses, credit, and foreign trade. "Eventually Congress will have to face the fact that there are too many farmers. The farm bill that Reagan has proposed, which in effect would abandon those parts of the federal program that subsidize the least successful farmers, may not be perfect, but so far it is the only one to concentrate on the problem of overproduction."

Ebeling, Walter, and others. Agriculture in America. Wilson quarterly, v. 5, summer 1981: 110-149.

This short series of articles presents an overview of current farm issues, examines world hunger and explains the U.S. role in alleviating it. Includes references.

Contents.--Roots, by W. Ebeling.--The new issues: land, water, energy, by T. Fulton and P. Braestrup.--America and world hunger, by N. Eberstadt.

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Currently there are five reports in this series; each is issued annually. The reports, which are largely statistical, are: Farm Sector Review, Costs of Production, National Financial Summary, Production and Efficiency Statistics, and State Financial Summary.

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Each of the first eight chapters are short essays on particular issues, such as PIK, pesticides, and lobbying. The second part of the book traces the development of Federal farm policy, especially since WWII.

Finegold, Kenneth. From agrarianism to adjustment: the political origins of New Deal agricultural policy. Politics & society, v. 11, no. 1, 1982: 1-27.

Examines the origins of the New Deal agricultural policy concentrating on the formation of the Agricultural Adjustment Administration in 1933 and the political and social influences involved.

Galston, William A. A tough row to hoe: the 1985 Farm Bill and beyond. Lanham, Md., Hamilton Press, c1985. 172 p.

"Brings together layman's prose with hard numbers to provide an overview of the issues underlying the debate over the 1985 farm bill, the basic options among which our representatives must choose, and the effects of their choice on consumers, farmers, rural Americans, manufacturers, and our trading partners."

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Knutson, Ronald D. Agricultural and food policy, by Ronald D. Knutson, J.B. Penn, and William T. Boehm. Englewood Cliffs, N.J., Prentice-Hall, c1983. 387 p.

Designed as an undergraduate textbook in agricultural and food policy, this book focuses on current issues. It covers basic policy processes, the international perspective, the domestic farm situation, consumer concerns, resource issues, and agriculture in the national economy.

----- Alternative policy tools for U.S. agriculture, by Ronald D. Knutson and James W. Richardson. [College Station] Texas A&M University, Agriculture Extension Service, 1983. 45 l.

Reprinted in this volume.

----- Farm and food policy--an overview. East Lansing, Michigan State University, Cooperative Extension Service, 1983. 8 p. (Farm and food system in transition, FS3)

Reviews the need for farm and food policies; briefly defines and discusses international trade and development policy, domestic farm policy, marketing policy, food policy, and resource policy. Identifies emerging issues.

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----- The food system: a century of transition, by Alden C. Manchester and Kathryn L. Lipton. National food review, v. 28, 1985: 1-5.

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"Revised November 1985"
"The major subdivisions are: Farm Production, Income, and Values [which] deals with farm production goods; the industries and service organizations that produce the goods and services that farmers buy to produce food and fiber; and farm income, and values; II. The Farming Operation [which] covers the farm business itself which combines land, labor, management, and capital to produce farm products; III. Food Marketing [which] describes the system of transportation, processing, and merchandising--including consumer education, advertising, and other elements of markets of marketing--that converts farm products into consumer products ready for use in homes, restaurants, and institutions here and overseas; IV. Agricultural Services [which] deals with activities of the U.S. Department of Agriculture and other government and private agencies that support modern agriculture--research, inspection, Extension, statistifs, forest management, regulatory activities, grading services, credit, and income support; [and] V. The Rural Social Environment [which] pertains to the population, environment, and social problems of smaller towns and open country."

Paarlberg, Don. Farm and food policy: issues of the 1980s. Lincoln, University of Nebraska Press, c1980. 338 p.
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"NAL SRB 85-02"
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Rasmussen, Wayne D. The mechanization of agriculture. Scientific American, v. 247, Sept. 1982: 77-89.
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Saloutos, Theodore. The American farmer and the New Deal. Ames, Iowa State University Press, 1982. 327 p.
(The Henry A. Wallace series on agricultural history and rural studies) This third volume in a trilogy on modern agricultural history presents the farm crisis which precipitated New Deal policies, describes the beginning of many long-lived principles and programs, and includes a brief appraisal of New Deal farm policy.

Sheets, Kenneth R. Twenty-two billion fails to spell relief for nation's farmers. U.S. news & world report, v. 95, Aug. 15, 1983: 53-57.

"Outraged taxpayers, harried lawmakers, indignant shoppers, embittered farmers--they're all demanding radical changes in the once proud U.S. farm system."

Stanton, B. F. What forces shape the farm and food system? East Lansing, Michigan State University, Cooperative Extension Service, 1983. 8 p. (Farm and food system in transition, FS2)
Reprinted in this volume.

State of American agriculture, 1984. With a statement by the Food and Agriculture Committee of the National Planning Association. Washington, The Association, 1984. 71 p. (FAC report no. 3; NPA report no. 212)
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Thompson, Roger. Farm policy's new course. Washington, Congressional Quarterly 1983. 235-252 p. (Editorial research reports, 1983, v. 1, no. 12)
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Tweeten, Luther G. Foundations of farm policy. 2d ed., rev. Lincoln, University of Nebraska Press, c1979. 567 p.
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Hearings held on Mar. 29-May 20, 1982.

----- The importance of agriculture to the U.S. economy. Hearings, 97th Congress. 1st session. Part 1. Sept. 14-15, 1981. Washington, G.P.O., 1982. 207 p.

----- Toward the next generation of farm policy; a staff study prepared for the use of the Joint Economic Committee and the Subcommittee on Agriculture and Transportation of the Joint Economic Committee, Congress of the United States. Washington, G.P.O., 1984. 87 p. (Print, Senate, 98th Congress, 1st session, joint committee print S. Prt. 98-171)

Includes The Emerging Economics of Agriculture: review and policy options by the Council for Agricultural Science and Technology, 1983. 38 p. (CAST report 98).

U.S. agricultural policy: the 1985 farm legislation, edited by Bruce L. Gardner. Washington, D.C, American Enterprise Institute for Public Policy Research, 1985. 385 p.

"The conference papers assess the current state of U.S. farming, the causes of this situation, and the prospects for improving matters by means of reforms in federal farm programs. Three themes come through strongly. One is that current problems in agriculture are related to macroeconomic events, notably the federal budget deficit, inflation, interest rates, and exchange rates. The second is that the extensive integrations of U.S. agriculture with the world economy that has occurred since 1970 has fundamentally altered the market situation of farmers and placed new constraints upon farm policy. The third is that it is now more crucial than ever to have commodity programs consistent with market realities."

Partial contents.--World commodity market situation and outlook.--International agriculture and trade policies: implications for the United States.--Farm financial stress, structure of agriculture, and public policy.--Options for the 1985 Farm Bill: an analysis and evaluation.--Macroeconomics and U.S. agricultural policy.--Farm programs and structural issues.--The repercussions of U.S. agricultural policies for the European community.

U.S. farmers' views on agricultural and food policy: a seventeen-state composite report. S.l., U.S. Dept. of Agriculture, Cooperative Extension Service, 1984. 44 p. (North Central regional extension publication 227; North Central regional research publication 300)

Presents responses of 8,085 farmers on price-support and commodity programs, credit policy, term program administration, food stamps, trade policy, and fiscal and monetary policy.

The United States Government Manual 1985-86. Prepared by the U.S. Office of the Federal Register, Washington, G.P.O., 1985. 927 p.

Use the subject/agency index to locate information about Federal agencies with responsibilities in agriculture.

Urban, Thomas N. Wanted: a new coalition to develop food and agriculture policies. Agricultural law journal, v. 4, winter 1983: 578-588.

Discusses long and short-term challenges in food and agricultural policy making.

Why the recovery may skip the farm belt. Business week, no. 2782, Mar. 21, 1983: 106-109, 112-114, 116.

This special report addresses the problems of the U.S. farmer--falling prices, surplus crops, rising indebtedness, weather; and why "Washington's new policy won't solve agriculture's long-term ills."

II. RESOLVED: THAT THE FEDERAL GOVERNMENT SHOULD ADOPT AN EXPORT PROMOTION PROGRAM TO SIGNIFICANTLY EXPAND FOREIGN MARKETS FOR UNITED STATES AGRICULTURAL PRODUCTS.

A. Background on the U.S. as an Agricultural Trading Nation

Avery, Dennis. U.S. farm dilemma: the global bad news is wrong. Science, v. 230, Oct. 25, 1985: 408-412.

"World agricultural production is at an all-time high and is climbing fast, especially in the developing countries. Even Africa has ample land and technology to feed its population, given more effective national policies . . . . Thus U.S. farmers will continue to face commercial surpluses of farm products in world markets in the years ahead."

Concludes "one thing seems certain: the price supports, land diversion, and storage programs that have dominated U.S. farm policy for the past 50 years work against the U.S. farmer in a world of high technology and rising productivity."

Baker, C. B. Agricultural effects of changes in financial markets. American journal of agricultural economics, v. 66, Dec. 1984: 541-548.
Surveys developments in international and domestic financial markets and concludes that "agriculture is affected more by fiscal-monetary management and the state of international markets in commodities and financial assets than by politically achievable targets in commodity prices and loan supports. Benefits to agriculture from sector-oriented price and income policy must be weighed against any negative general consequences as they are transmitted back to agriculture through financial and commodity markets."

Cook, Kenneth A., and Susan E. Sechler. Agricultural policy: paying for our past mistakes. Issues in science and technology, v. 2, fall 1985: 97-110.
The authors argue that the cost of Federal programs will remain high if the U.S. continues to rely on the fickle export market, that subsidies must be scaled back and that "no policy can reverse the century-long trend toward fewer, larger, more highly capitalized commercial farms."

Domestic agricultural policy in an international environment. American journal of agricultural economics, v. 66, Dec. 1984: 728-744.
"Proceedings from the annual meeting of the American Agricultural Economics Association held 5-8 August 1984 in Ithaca, New York."
Contents.--International impact of U.S. domestic farm policy, by D. Amstutz.--Domestic agricultural policy in an international environment: effects of other countries' policies on the United States, by D. Johnson.

Drabenstott, Mark. The 1980s: a turning point for U.S. agricultural exports? Federal Reserve Bank of Kansas City economic review, Apr. 1983: 3-15.
Examines the probable course of U.S. agricultural exports during the rest of the 1980s. Section I discusses the changing trends in U.S. agricultural exports. Section II examines how a number of market factors have reduced agricultural exports during the past three years. Section III analyzes new market developments and trade policies that might stimulate future exports. The final section draws some conclusions about the future of U.S. agricultural exports and summarizes the findings of the article.

----- U.S. agriculture: the international dimension. Federal Reserve Bank of Kansas City economic review, v. 70, Nov. 1985: 3-8.
"An increase in farm exports is an important key to restoring agricultural prosperity in the United States. The future course of farm exports is closely tied to economic growth in the world's developing countries."

----- Competing in the world marketplace: the challenge for American agriulture, by Mark Drabenstott and Kim Norris. Federal reserve bank of Kansas City economic review, v. 71, Feb. 1986: 3-13.
Reprinted in this volume.

East-West agricultural trade, 1979-1984. Beltsville, Md., U.S. National Agricultural Library, 1984. 23 p. (Quick bibliography series)
"NAL-BIBL. 85-02"
Lists 215 citations from the AGRICOLA database.

Foreign agriculture: the magazine for business firms selling U.S. farm products overseas. v. 1+ 1937+ Washington, U.S. Dept. of Agriculture, Foreign Agricultural Services. monthly.
Short feature articles examine U.S. agricultural export trade, overseas markets, and competitive foreign production and trade. Recurring departments provide marketing news, trade updates, and country briefs.

Frankel, Jeffrey A. Commodity prices and money: lessons from international finance. American journal of agricultural economics, v. 66, Dec. 1984: 560-566.

"My topic today is the determination of the prices of basic commodities, everything from agricultural commodities to the gold and other metals so precious to the supply-siders."

Goldberg, Ray A. A concept of a global food system and its use by private and public managers. Agribusiness, v. 1, spring 1985: 5-23.

"Agribusiness, broadly defined, is still the most important sector in the world economy. From a policy-making standpoint, it is best to view agribusiness as an interdependent global food system. When individual countries formulate agriculture and trade policies, they rarely take into account interactions with policies of other nations. The result of uncoordinated policy making has been increased price volatility and greater risk for agribusiness firms. To counteract, new trading entities have formed and the role of trade facilitators such as the World Bank has taken on greater importance. There are needs for international coordinating and conflict resolving mechanisms for the trade of traditional agricultural commodities and high valued products. There is also a need to reconcile the rapidly evolving global agribusiness system with non-commercial agriculture and with persistent hunger problems."

Hillman, Jimmye S. Trade and the U.S. food and fiber system. East Lansing, Michigan State University, Cooperative Extension Service, 1984. 7 p. (Farm and food system in transition, FS21)

Reprinted in this volume.

Insel, Barbara. A world awash in grain. Foreign affairs, v. 63, spring 1985: 892-911.

Analyzes trends in U.S. and world grain production and exports. "Like the United States, the world has also learned how to protect its farmers by supporting grain prices artificially, stimulating still higher levels of production. As a consequence, we have entered an era of permanent grain surpluses." Contends that although agriculture in the U.S., in the EEC, and elsewhere has been treated as a domestic political issue, "the fundamental changes which have taken place in world agriculture must now be matched with equally fundamental changes in world agricultural policy."

Longmire, Jim. Long-term development in trade in feeds and livestock products, by Jim Longmire and Walter H. Gardiner. Washington, U.S. Dept. of Agriculture, Economic Research Service, available through NTIS, 1984. 21 p. (Foreign agricultural economic report no. 199)

"International trade in feeds outpaced trade in livestock products during the 1970's, reflecting a trend toward greater domestic livestock production and the inability of some countries to keep feed production in line with demand. Trade in feeds, poultry, and dairy products grew faster in the 1970's than in the 1960's, while trade in red meats grew at a much slower pace. Long-term trade patterns will be influenced not only by technological advances for each commodity but also by trade policies, consumers' preferences, and cultural practices."

----- Strong dollar dampens demand for U.S. farm exports, by Jim Longmire and Art Morey. Washington, U.S. Dept. of Agriculture, Economic Research Service, [for sale by the Supt. of Docs., G.P.O.] 1983. 31 p. (Foreign agricultural economic report, no. 193)

"A model outlined here helps to assess the effect of changes in the dollar's value, adjusted for inflation, on U.S. exports of wheat, corn, and soybeans. The model estimates that a 20-percent rise in the inflation-adjusted value of the dollar over 2 years will cut U.S. exports of wheat, corn, and soybeans by 16 percent."

McLennan, Kay L. World shipping competition to remain keen. World agriculture, Dec. 1985: 36-39.

"Currently, freight rates are depressed and the outlook for world shipping profits is bleak. The sustained slump in world shipping rates has helped maintain and expand current markets for agricultural products. However, the present overcapacity in shipping has motivated many foreign governments to increase their protection of shipping."

McNitt, Harold A. The EC market for U.S. agricultural exports: a share analysis. Washington, U.S. Dept. of Agriculture, Economic Research Service [for sale by the Supt. of Docs., G.P.O.] 1983. 82 p. (Foreign agricultural economic report no. 179)

Assesses the market potential for all major US agricultural exports to the EC. Author finds that the "United States will continue as a leading supplier to the EC of soybeans, sunflowerseed, corn and corn gluten feed, peanuts, citrus pulp, some animal products, and soybean mean during 1981-85. EC trade policies, however, sharply restrict imports of most fruits and vegetables, processed foods, and meats."

Organization for Economic Cooperation and Development. Problems of agricultural trade. Paris, 1982. 178 p.

Contents.--General trends in OECD trade during the 1970s.--Relations between agricultural trade, domestic agricultural policies and the general economy.--Making agricultural markets work better.--Conclusions.

Runge, C. Ford. Land use: the future of the North American granary. Environment, v. 26, Oct. 1984: 4-5, 44-45.

Discusses the University of Minnesota's June 1984 conference on the North American granary, which focused on the impacts of international economics and politics on North America's comparative advantage in world grain markets, changing climate, natural resource constraints, and strategies for overcoming risks to North American agriculture.

Sorenson, Vernon L. International food policy and the future of the farm and food system. [East Lansing] Michigan State University, Cooperative Extension Service, 1983. 8 p. (Farm and food system in transition, FS9)

Presents a brief history of U.S. agricultural trade since WWII and outlines factors bearing on future agricultural trade policy.

Special report: exports and trade. Agricultural outlook, Dec. 1985: 32 p.

Contents.--World export forecasts by region.--Exports & the U.S. agricultural economy.--Where do U.S. exports go?--India's agricultural success story.--China's agricultural revolution.--EC grain policies hurt U.S. exports.--P.L. 480: filling the gap.--The year after the drought: how much recovery for Ethiopia and Sudan?--House 1985 Farm Bill trade provisions.

Toward the twenty-first century: U.S. agriculture in an unstable world economy. American journal of agricultural economics, v. 66, Dec. 1984: 577-600.

"Proceedings from the annual meeting of the American Agricultural Economics Association held 5-8 August 1984 in Ithaca, New York."

Contents.--An assessment of global demand for U.S. agricultural products to the year 2000: economic and policy dimensions, by F. Sanderson. --The future productive capacity of U.S. agriculture: economic, technological, resource, and institutional determinants, by C. Edwards and D. Harrington.--U.S. public policies and institutions in an unstable future, by R. Thompson.--Toward the twenty-first century: U.S. agriculture in an unstable world economy: discussion, by G. Johnson.--Toward the twenty-first century: U.S. agriculture in an unstable world economy: discussion, by S. Batie.

Trade: U.S. policy since 1945. Washington, Congressional Quarterly, 1984. 256 p.

Contents.--U.S. trade policy: issues in the 1980s.--Trade liberalization, 1945-68.--Competition and protection in the 1970s.--Trade with communist nations.--Canada: largest U.S. trading partner.--Trade issues strain U.S.-Japan ties.--U.S. farm exports: subsidies and barriers.--Aiding exporters: the Ex-Im Bank's role.--High-tech trade and national security.--Developing an industrial policy.--Glossary of trade terms and organizations.--Bibliography.

U.S. agriculture in a global economy: 1985 yearbook of agriculture. Washington, U.S. Dept. of Agriculture [for sale by the Supt. of Docs., G.P.O.] 1985. 410 p.

This book provides a very readable overview of world agriculture and agricultural trade. Its 33 essays by experts are grouped into five parts: agriculture in a changing world, agriculture around the world, world trade in agricultural products, the policy environment, and looking ahead.

U.S. Congress. House. Committee on Agriculture. General agricultural export and trade situation. Hearing, 97th Congress. 2d session. Mar. 9, 1982. Washington, G.P.O., 1982. 218 p.

"Serial no. 97-HHH"

----- Committee on Agriculture. Review of agricultural exports and trade (Secretary John R. Block). Hearing, 98th Congress, 1st session. Oct. 18, 1983. Washington, G.P.O., 1984. 252 p.

"Serial no. 98-39"

----- Review of agricultural trade issues. Joint hearing before the Committee on Agriculture and the Committee on Foreign Affairs, House of Representatives, 98th Congress, 1st session. Apr. 7, 1983. Washington, G.P.O., 1983. 102 p.

"Serial no. 98-11"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Department Operations, Research, and Foreign Agriculture. U.S. commodity price supports and competitiveness of agricultural exports; prepared by the Congressional Research Service, Library of Congress for the Subcommittee on Department Operations, Research, and Foreign Agriculture of the Committee on Agriculture, U.S. House of Representatives. Washington, G.P.O., 1985. 113 p.

At head of title: 99th Congress, 1st session. Committee print.

"This report briefly reviews the history of U.S. commodity price support programs, examines export trends for wheat, corn, and soybeans, and assesses the effect of commodity price supports on exports of those commodities. In addition, the report analyzes the effect of the appreciation of the dollar, other macroeconomic variables, policy developments, and other factors that appear to effect U.S. agricultural exports."

U.S. Congress. House. Committee on Foreign Affairs. Review of agricultural trade issues. Joint hearing before the Committee on Foreign Affairs and the Committee on Agriculture, House of Representatives, 97th Congress. 2d session. Aug. 11, 1982. Washington, G.P.O. 1982. 52 p.

"Serial no. 97-LLLL"

U.S. Congress. Joint Economic Committee. Subcommittee on Economic Goals and Intergovernmental Policy. The vulnerability of the Texas economy to world trade patterns; a study prepared for the use of the Subcommittee on Economic Goals and Intergovernmental Policy of the Joint Economic Committee, Congress of the United States. Washington, G.P.O., 1985. 27 p. (Print, Senate, 99th Congress, 1st session, joint committee print S. Prt. 99-105)

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Agricultural export trade. Hearings, 98th Congress, 1st session. Feb. 17 and 25, 1983. Washington, G.P.O., 1983. 449 p.

Hearings on S. 14, S. 18, S. 77, S. 100, S. 124 (Title V), S. 251, S. 398, S. 490, and S. 575 (Title XI).

----- Trade policy perspectives: setting the stage for 1985 agricultural legislation. Washington, G.P.O., 1984. 366 p. (Print, Senate, 98th Congress, 2nd session, committee print S. Prt. 98-263)

Includes over thirty papers, presenting perspectives from the U.S. Dept. of Agriculture, farmers and ranchers, economists, and agribusiness. Appendices cover policy alternatives, describe policy tools, discuss the EEC's policy and foreign subsidized competition, define terms, and list references.

----- Subcommittee on Foreign Agricultural Policy. Examining the competitive position of U.S. agriculture in the current world environment. Hearing, 99th Congress, 1st session. Feb. 7, 1985. Washington, 1985. 90 p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-57)

U.S. Congress. Senate. Committee on Foreign Relations. Subcommittee on International Economic Policy. United States economic relations. Hearings, 98th Congress, 1st session. Washington, G.P.O., 1983. 133 p. (Hearings, Senate, 98th Congress, 1st session, S. Hrg. 98-601)

Hearings held Sept. 28, 1983--Brazilian debt/economic policy and Oct. 24, 1983--United States-European economic relations.

White, T. Kelly. The Global food system & the future U.S. farm & food system. Easting Lansing, Michigan State University, Cooperative Extension Service, 1984. 11 p. (Farm and food system in transition, FS20)

Describes the nature of the world food and fiber system and the constraints under which it operates, touching on food needs, potential supply, and trade issues. Comments on the links between domestic food and agricultural policies and the global food system.

B. Agricultural Trade Relations

Bain, Robert. Changes in the international grain trade in the 1980's. Washington, U.S. Dept. of Agriculture, Economic Research Service [for sale by the Supt. of Docs., G.P.O.] 1981. 35 p. (Foreign agricultural economic report, no. 167)

"The main grain-exporting countries may cooperate more closely in the eighties than in the past. In addition, there may be incentives to vary the policies of the marketing boards in Australia and Canada and increased internal pressure for the United States to sever the link between world grain prices and its domestic prices. Those are some possible consequences if forecasts of higher and less stable grain prices in the eighties are realized and if the structure of world trade continues to move toward more bilateral agreements and a greater role for state trading organizations."

Boger, William H., III. The United States-European Community agricultural export subsidies dispute. Law and policy in international business, v. 16, no. 1, 1984: 173-238.

Outlines U.S. and EEC agricultural policies and programs and the trade war atmosphere which has evolved. Analyzes four GATT decisions and finds them to have been ineffective. Suggests that the U.S. and EEC should work for a bilateral compromise, and that such a compromise would be politically beneficial to each side.

Brada, Josef C. The Soviet-American grain agreement and the national interest. Journal of agricultural economics, v. 65, Nov. 1983: 651-656.

"The objective of this paper is to evaluate the U.S.-USSR grain agreement, and by analogy similar agreements between the USSR and Canada and Argentina, in order to demonstrate how such agreements can help to achieve an equitable distribution of the gains from trade in grains between the Soviet Union and western grain-exporting countries."

Brown, Lester R. The food connection: transforming the U.S.-Soviet relationship. Futurist, v. 16, Dec. 1982: 9-16.
"The new trading partnership demonstrates in clear economic terms that the United States and the Soviet Union need each other--and in the long run such economic forces tend to override political considerations."

----- U.S. and Soviet agriculture: the shifting balance of power. Washington, Worldwatch Institute, 1982. 48 p. (Worldwatch paper 51)

Butler, Nicholas. The ploughshares war between Europe and America. Foreign affairs, v. 62, fall 1983: 105-122.
Discusses the European Economic Community's Common Agricultural Policy and the 1979 Tokyo Round agreement. Recommends that both the EEC and U.S. reduce subsidies and set stable production targets to solve shared problems of surplus grain stocks and falling farm incomes.

Cathie, John. US and EEC agricultural trade policies: a long-run view of the present conflict. Food policy, v. 10, Feb. 1985: 14-28.
Examines protectionist policies and origins of current conflicts between the U.S. and EEC as agricultural traders. "The grain sector is used to illustrate the dominant tendencies in US agricultural policies, which include a programme of food aid used as an outlet for US agricultural capacity. The conclusion outlines how the EEC, with its potential for further growth in grain exports, can learn from the US experience in this, and other, aspects of agricultural trade."

Dalsager, Poul, and John R. Block. Seeds of discontent: US, EC air disagreements over farm policies. Europe, no. 232, July-Aug. 1982: 16-21.
The European Community Commissioner responsible for agriculture and the U.S. Secretary of Agriculture express their views on agricultural trade, including tariffs, price supports, sugar and grain.

Eastman, Beth. US-EC relations split on farm trade. Europe, no. 235, Jan.-Feb. 1983: 4-6.
"US and EC, at odds over agricultural policies, look for ways to avoid confrontation."

Echols, Marsha A. Section 301: access to foreign markets from an agricultural perspective. International trade law journal, v. 6, fall-winter 1980-1981: 4-23.
Discusses the history of multilateral trade agreements and of Title IX of the Trade Agreements Act of 1979. "The Congress has repeatedly expressed through legislation its desire that the President act, when appropriate, to protect the access of U.S. exports of agricultural products to foreign markets" and concludes "that carefully selected, self-initiated cases which lead to the development of clear guidelines on the use of nontariff barriers to trade in agricultural products would be of benefit to all exporters of agricultural products."

Gaines, David B., William C. Sawyer, and Richard Sprinkle. EEC Mediterranean policy and U.S. trade in citrus. Journal of world trade law, v. 15, Sept.-Oct. 1981: 431-439.
Note concludes that preferential tariff agreements with the Mediterranean countries give EEC importers an incentive to switch from U.S. and other nonpreferred countries to preferred Mediterranean countries: Israel, Morocco, Spain, Cyprus, Greece.

Hillman, Jimmye S. US and EC agricultural trade policies: confrontation or negotiation? Intereconomics, Mar.-Apr. 1983: 72-77.

"The current American and European mutual accusations of agricultural protectionism are an obvious case of the pot calling the kettle black. What series of events led up to this confrontation? And how can the conflict situation be eased?"

Kirthisingha, P. N. Recent changes in international commodity agreements. Resources policy, v. 11, Sept. 1985: 177-190.
"The contents of international commodity agreements have changed from those in which open-ended intervention mechanisms regulated the market defending a normative price to those limiting intervention so as not to obscure market price. Underlying this change is the principle to which the developed countries accorded the highest priority, namely that the interests of producing and consuming countries must balance to avoid an indiscriminate transfer of resources."

Losch, Dieter. Current EC-US economic conflicts. Intereconomics, no. 2, Mar.-Apr. 1984: 51-56.
Surveys issues in U.S.-EEC trade in agriculture and steel. Also examines attitudes toward the U.S. budget deficit, East-West trade and other matters.

Lyons, James M. Japan's quantitative restrictions on the importation of agricultural products. Journal of international law, v. 15, summer 1983: 569-586.
This article sees seemingly irresistible political and economic forces propelling Japan and the U.S. on a collision course.

Madison, Christopher. The pitchfork war--U.S., Europe feud over European agricultural subsidies. National journal, v. 14, Jan. 16, 1982: 105-109.
Discusses dissatisfaction of American farmers and the U.S. government with the European Economic Community's Common Agricultural Policy. The policy allows European farmers to sell commodities at world prices and receive a subsidy equal to the difference between European and market prices.

Medvedev, Zhores. Russia learns to live without American grain. New scientist, v. 89, Jan. 8, 1981: 58-61.
The author, a Russian agriculturalist now working in London, describes Soviet agriculture and concludes that the total effect of the U.S. embargo was to strengthen reform in agricultural policy in the USSR.

Normile, Mary Anne. Canada's new rail law: effects on U.S. trade. Agricultural outlook, no. AO-97, Apr. 1984: 21-23.
Suggests that "eventually, restructuring freight rates could affect U.S.-Canadian trade in live animals and meat through its effect on Prairie grain prices . . . . The expected reduction in farm grain prices will favor expansion of livestock production in the West." Also predicts increased U.S.-Canadian competition both with U.S. markets and in U.S. export markets.

Paarlberg, Philip L., and Jerry A. Sharples. Japanese and European community agricultural trade policies: some U.S. strategies. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1984. 16 p. (Foreign agricultural economic report no. 204)
"Japanese and European Community (EC) wheat and coarse grains policies have increased the cost of U.S. farm programs and cut U.S. farm income. The agricultural sector in the United States would benefit from selective EC and Japanese agricultural trade liberalization. This study looks at the alternatives open to the United States, Japan, and the EC, and determines which alternatives would benefit the agricultural sectors of all three parties."

Sakoh, Katsuro. Food exports and the U.S.-Japan trade deficit. Washington, Heritage Foundation, Asian Studies Center, 1984. 12 p. (Backgrounder no. 15)

Points out that Japan is the largest customer for U.S. farmers; despite American popular opinion about Japanese protectionism, shows that the country has a relatively open agricultural market. "Because of Japanese worries about food security, the recent U.S. 'get tough' strategy on the farm import issue will not be the most effective approach. Rather than intimidations, the U.S. government should extend more positive and attractive proposals, such as stronger assurance of food security, to the Japanese people."

Sheets, Kenneth R. New trade wars? U.S. farmers say they're ready. U.S. news & world report, v. 96, Mar. 12, 1984: 71-72.

Briefly reviews causes of farm export slump, including EC policies, the strong dollar, and embargoes imposed by Nixon, Ford, and Carter. "Many economists predict that, while the U.S. will continue to be the leader in world food trade, it is doubtful that American farmers will ever recapture their lost overseas markets."

Stokes, Bruce. Trade disputes are straining the ties that bind America and Western Europe. National journal, v. 17, Aug. 1, 1985: 1894-1897.

"While the relationship is deep enough to make any trade rupture very unlikely, the magnitude of these ties would raise the cost of even a minor trade war."

Timer, C. Peter, and Michael R. Reich. Japan and the U.S.: trading shots over beef and oranges. Challenge, v. 26, Sept.-Oct. 1983: 18-24.

"An examination of the conflicts over beef and citrus reveals the stakes for the agricultural economies and the domestic politics of both the United States and Japan. The conflicts over beef and citrus are connected to key issues of structural adjustment for agriculture and industry, especially the long-run role of rice in Japanese agriculture and that of automobiles and other 'smokestack' industries in the American economy, as well as to the political pressures that obstruct and facilitate negotiations in the two countries."

U.S.-Japanese agricultural trade. Foreign agriculture, v. 22, Sept. 1984: 4-17.

Contents.--Japan's agricultural market: a rising tide of opportunity, by S. Hale.--Japan expands market for U.S. agricultural products, by R. Blabey and D. Rosendahl.--Cutting Japanese tariffs is major task of U.S. wood products industry, by L. Blum.--Japanese agricultural policy is key to future imports, by R. Blabey.

U.S. Congress. House. Committee on Ways and Means. Subcommittee on Trade. United States-Japan trade relations. Hearings, 98th Congress, 1st session. Washington, G.P.O., 1983. 548 p.

"Serial 98-13"

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Subcommittee on Foreign Agricultural Policy. U.S.-European agricultural trade. Hearings, 97th Congress. 1st session., Dec. 10, 16-17, 1982. Washington, G.P.O., 1982. 114 p.

----- U.S.-Japanese agricultural trade relations. Hearing, 97th Congress, 2d session. Washington, G.P.O., 1982. 84 p.

Hearing held in Sacramento, Calif., Feb. 12, 1982.

U.S. Congress. Senate. Committee on Finance. Consulting with the government of Japan on exports of agricultural products from the United States to Japan; report to accompany S. Res. 462. Washington, G.P.O., 1982. 3 p. (97th Congress. 2d session. Senate. Report no. 97-642)

U.S. Congress. Senate. Committee on Foreign Relations. International trade distortions harming U.S. agricultural exports. Hearing, 98th Congress, 2nd session. June 26, 1984. Washington, G.P.O., 1984. 114 p. (Hearing, Senate, 98th Congress, 2nd session, S. Hrg. 98-1010)

U.S. Congress. Senate. Committee on Governmental Affairs. Subcommittee on Energy, Nuclear Proliferation, and Government Processes. Growing agricultural trade protectionism in Europe. Hearing, 97th Congress, 1st session. Washington, G.P.O., 1982. 229 p.

Hearing held in Urbana, Ill., Oct. 16, 1981.

C. Philosophies and Policy Tools of U.S. Agricultural Trade

Amstutz, Daniel G. U.S. farm policy and international agricultural markets. Case Western Reserve journal of international law, v. 17, summer 1985: 321-333.

Reviews the changes that have taken place in the global agricultural and trade environment since the early 1970's, advocates freer world markets.

Belongia, Michael T., and Courtenay C. Stone. Would lower federal deficits increase U.S. farm exports? Federal Reserve Bank of St. Louis review, v. 67, Nov. 1985: 5-19.

The authors "investigate the validity of a conventional policy recommendation among agricultural economists: that reducing the federal budget deficit is a necessary component of any effort to increase agricultural exports. While widely accepted, Belongia and Stone argue that at least three propositions must be true for this recommendation to have some legitimacy. The first two propositions require positive relationships between deficits and the real rate of interest and between the real rate of interest and the real value of the dollar. The last proposition requires a negative relationship between the real value of the dollar and real farm exports. [They] investigate these propositions by explaining the relevant economic theory behind each and offering both simple and detailed statistical evidence regarding the predictions of these theories."

Environmental and Energy Study Institute. A Congressional agenda for improved resource and environmental management in the Third World: helping developing countries help themselves. Prepared by a Task Force of the Environmental and Energy Study Institute. Washington, The Institute, 1985. 50 p.

"Strengthening the developing countries' own capability to meet their natural resource challenges is one sure and effective way for them to achieve long-term, sustainable growth, repay their debts and become effective trading partners." The panel proposes a new, more cost-effective approach to development aid, rather than big new expenditures. It stresses smaller scale projects which efficiently use energy, water, and other resources and which are economically sustainable.

Export marketing: fitting the pieces together. Foreign agriculture, v. 22, May 1984: 4-14.

Contents.--Mexico: a market to watch.--Selling grains, oilseeds and livestock to Mexico, by J. Montel.--Scientific exchanges benefit U.S.-Mexican farm trade, by M. Salwin.--Marketing U.S. farm goods in Mexico's free zones, by J. Montel.

Food aid: the U.S. story. Foreign agriculture, v. 22, Oct. 1984: 4-19.

Partial contents.--The world food situation: despite progress, much more to do, by R. Kennedy.--Changing conditions call for new export initiatives, by M. Chambliss.--Title I: building commercial expertise at home and abroad, by C. Delaplane.--P. L. 480 food aid: big success in the Pacific Rim, by K. Kunkel.

Food for peace: 1984 annual report on Public Law 480. Washington, U.S. Foreign Agricultural Service, 1985. 75 p.

"During fiscal year 1984, Title I and III agreements were signed with 29 countries to provide approximately 3.78 million metric tons of food assistance. Title III, Food for Development programs were signed with six countries--Bangladesh, Bolivia, Egypt, Honduras, Senegal and Sudan. The Title II program provided approximately 1.2 million metric tons of food assistance to 76 countries, with substantial contributions made to programs of the U.S. voluntary agencies and the World Food Program, including contributions through the International Emergency Food Reserve."

Ghoshal, Animesh. Going against the grain: lessons of the 1980 embargo. World economy, v. 6, June 1983: 183-193.
"This article assesses the impact of the embargo and draws some conclusions about economic sanctions in general and about sanctions imposed primarily by one country on another in particular."

Giacomo, Carol. Food for peace. Journal of defense & diplomacy, v. 3, Apr. 19[illegible]: 23-27.
Describes Food for Peace (Public Law 480) and discusses how U.S. presidents have used food aid as a foreign policy tool.

Glen, Maxwell. Farm, maritime interests square off on subsidies for agriculture exports. National journal, v. 17, July 6, 1985: 1564-1567.
"The two industries are fighting over legislation to limit the requirement that half of all government-aided exports must be carried on U.S.-flag ships.

Goldberg, Richard W. Goldberg for market-oriented policies. Milling & baking news, v. 62, Oct. 18, 1983: 58, 60.
In this speech to the National Grain Trade Council, U.S. Deputy Undersecretary of Agriculture for International Affairs and Commodity Programs states that "the more market-oriented U.S. agriculture, the more expensive it will become for our competitors, particularly the E.C., to insulate their farmers from the marketplace. A clear signal that the U.S. is moving down the road to freer markets will hasten the return to more rational trade policies the world over."

Hathaway, Dale E. The Challenge in building demand for U.S. farm exports. Federal reserve bank of Kansas City economic review, v. 71, Feb. 1986: 15-27.
Examines the markets for U.S. agricultural products. "The key variable to our export markets is world market growth."

Impacts of policy on U.S. agricultural trade. Washington, U.S. Dept. of Agriculture, Economic Research Service, International Economics Division, 1984. 87 p.
"ERS staff report no. AGES840802"
Examining the agricultural trade policy environment surrounding the 1985 farm bill, asserts "first, U.S. domestic farm programs project a trade policy to other nations; that is, the trade effects of U.S. policies are not neutral. Second, the trade effects of U.S. policies differ according to the export demand situation facing the United States. Third, macroeconomic policies could have a major impact on achieving the objectives of U.S. farm policy established in the 1985 farm legislation."

Iowa in the world economy: dependency and interdependency. Edited by Ross Talbot. Ames, Iowa State University Press, 1985. 111 p.
Presents revisions of papers presented at a conference organized by the Iowa State University Chapter of the Society for International Development in March 1984. The conference objectives were: "to identify major goals of U.S. trade and aid politics; to examine the current dependency of Iowa on international trade and the effect of U.S. foreign trade and aid on developing countries; to discuss strategies that Iowans might follow to influence the direction of trade and aid policies."

Johnson, D. Gale, Kenzo Hemmi, and Pierre Lardinois. Agricultural policy trade: adjusting domestic programs in an international framework. New York, The Trilateral Commission (published by New York University Press] 1985. 132 p.

Partial contents: United States Agricultural Policy.--Consumer and Taxpayer Costs.--GATT Provisions for Agriculture.--Effects of Farm Programs on Foreign Trade.--Effects on Developing Country Exports.--Market-Oriented Policies and Farm Incomes.--Diminishing Agricultural Employment in Growing Economies.--Recommendations.

Joshi, M. K. Recent trends in US agricultural export policy. IDSA Institute for Defense Studies and Analyses journal, v. 16, July-Sept. 1983: 56-76.

"Unlike most other exporting countries, the US has sought to intertwine its policies with its foreign policy goals . . . . The attempt to use agricultural export as a weapon of diplomacy proved to be a great failure in 1980 when the US sought to embargo the Soviet Union . . . . While it has learnt to its cost the difficulties in using food as a political weapon with the USSR, it will certainly continue to use it so with the countries of the third world. Obviously in times of unnatural calamity and ruined harvests, US diplomatic power will increase. To offset this, it will be necessary for the third world countries to think in terms of an internationally held food reserve as well as a fund that could enable purchases for the indigent countries in the open market."

McMenamin, Michael, and Walter McNamara. The great grain charade. Inquiry (San Francisco) v. 4, Feb. 23, 1981: 13-17.

Authors posit that the U.S. grain embargo against the U.S.S.R. has been a policy failure because U.S. grain on the world market reached the Soviets through middlemen and U.S. consumers and taxpayers were the real losers as the Soviets bid the price of grain up on the world market.

Madison, Christopher. If it can't beat Europe's farm export subsidies, U.S. may opt to join them. National journal, v. 15, Jan. 15, 1983: 114-117.

"In self-defense, the Administration has already begun to subsidize U.S. farmers. Such export promotion steps could transform domestic farm policy."

Mayer, Leo V. U.S. policies affecting international agriculture trade. Case Western Reserve journal of international law, v. 17, summer 1985: 421-433.

"American farm policy establishes a framework for the international exchange of agricultural products that affects all nations, including those that do not utilize international markets for purchse or disposition of farm products."

P.L. 480: food for peace program marks its thirtieth anniversary. Foreign agriculture, v. 22, July 1984: 14-17.

Presents basic facts on P.L. 480: its evolution, program descriptions of the titles, value of export shares by states, and sales procedures. Includes statistics for 1983 and 1984.

Paarlberg, Philip L. When are export subsidies rational? Agricultural economics research, v. 6, winter 1984: 1-7.

"The traditional model used to analyze trade issues suggests that an export subsidy on agricultural products is an irrational policy choice. However, export subsidies are common in world agricultural trade. By relaxing the assumptions of the traditional model, researchers can develop several frameworks for explaining the use of export subsidies."

Ponte, Lowell. Food: America's secret weapon. Reader's digest, v. 120, May 1982: 65-72.

"In a world where food is becoming as valuable as energy, the awesome abundance of America's farms is finally being seen in its true light--as a source of power, a means to profit, a weapon for peace."

Proposals to establish a Department of Trade. Washington, American Enterprise Institute for Public Policy Research, 1984. 49 p. (Legislative analysis no. 43, 98th Congress, 2nd session)

Contents.--Background: protectionist policies; reciprocal trade agreements legislation; post-World War II developments; the Eisenhower years; 1962 trade agreements legislation; the Nixon-Ford years; the Carter years.--Distribution of international economic responsibilities.--Legislative proposals: S. 121; S. 21; H.R. 3481; H.R. 4432; S. 1723.--A trade department: pro and con.--Scope of department.--Other issues.

Rapp, David. House panel votes farm bill with 'protectionist' provision. Congressional Quarterly weekly report, v. 43, Sept. 14, 1985: 1828-1833.

Outlines the provisions of the Omnibus Farm Bill (HR 2100) as the House Agriculture Committee sent it to the floor.

Rasmussen, Wayne D., and Jane M. Porter. Strategies for dealing with world hunger: post-World War II policies. American journal of agricultural economics, v. 63, Dec. 1981: 810-818.

The authors trace the development of U.S. food policy since World War II and assess its relationship to agricultural policies and programs.

Schuh, G. Edward. Future directions for food and agricultural trade policy [with discussion by T. E. Josling]. American journal of agricultural economics, v. 66, May 1984: 242-249.

If U.S. agricultural "export performance does not improve, we will be forced to deal with a sizable adjustment problem of transfering resources out of agriculture." Schuh reviews recent changes in the international economy and suggests that U.S. export performance might be improved by more flexibility in support levels for export crops, trade liberalization, and promotion of Third World economic development. Josling discusses the need to internationalize agricultural policy.

Seara-Vazquez, Modesto. A note on the destruction of food as a crime against humanity. Development and peace, v. 5, autumn 1984: 96-101.

"Humanity must find global solutions to the global problems we are dealing with, or else face the inevitability of such an escalade in social conflict that extinction of all forms of civilization will not only be possible but very probable . . . . The destruction of food for economic reasons, the policies to reduce food production and the keeping of huge stocks of food beyond what is reasonable from the point of view of food security, should be considered a crime against humanity, as long as those practices contribute, directly or indirectly, to the deaths or undernourishment of millions of people."

Sek, Lenore, and Carl Ek. Cargo preference and agriculture. Congressional Research Service review, v. 6, Sept. 1985: 11-13.

"A portion of government-sponsored imports and exports, including food aid, is reserved for the U.S.-flag merchant fleet. This reservation, called cargo preference, increases transportation costs. Agriculture groups have opposed cargo preference, because the increase in transportation cost is paid out of the budget for agriculture programs. A recent Court decision that would expand cargo preference has fueled the long-standing conflict between the maritime and agriculture interests over the issue of cargo preference."

Sharples, Jerry. Are export subsidies the answer to U.S. grain surpluses? West Lafayette, Ind., Dept. of Agricultural Economics, Purdue University, 1984. 21 p. (Staff paper no. 84-10)

Examines the economics of a grain export subsidy in the U.S. for the 1983/84 marketing year. This would expand exports and reduce surpluses; however, costs are high, producers' benefit is minimal, and the international market would be disrupted.

----- World trade and U.S. farm policy, by Jerry A. Sharples, Alan Webb, and Forrest Holland. Washington, U.S. Dept. of Agriculture, Economic Research Service [for sale by the Supt. of Docs., G.P.O.] 1984. 18 p.

"Agricultural exports are important both to the U.S. farm economy and the nonfarm economy. Grains, oilseeds, and oilseed products represent over two-thirds of the value of U.S. agricultural exports. The United States has the abundant land resources and the technology to compete effectively in the growing global market for these commodities. Growth in agricultural exports will depend upon U.S. domestic policies: macroeconomic policy, trade policy, and farm policy. A major policy conflict exists between supporting domestic grain prices and expanding exports."

Shepherd, Jack. When foreign aid fails. Atlantic monthly, v. 255, Apr. 1985: 41-46.

Asserts that "twenty years of Western assistance have done little to help, and much to harm, the Africans' ability to feed themselves." Reviews some major food and agriculture projects including Mother-Child Health and Food for Work. Discusses interplay between long-term development and short-term food aid in Africa and reviews Reagan policies toward foreign aid.

Stern, Paula. Trade problems in agriculture: will the circle be unbroken? Vital speeches of the day, v. 51, Sept. 15, 1985: 725-728.

The chairwoman of the U.S. International Trade Commission addresses the U.S. Food Grains Council Meeeting in Seattle, Aug. 12, 1985 on fair trade, import relief, agricultural exports, and offers a six point program for a new national trade policy.

Thurow, Lester C. A world-class economy: getting back into the ring. Technology review, v. 88, Aug.-Sept. 1985: 27-31, 34-37.

"The central task of the next quarter-century will be to regain our industrial competitiveness in international markets. And to achieve that, the United States will require coherent, visible, and highly effective industrial policies. By industrial policies, I do not mean detailed central planning, but a corporative relationship in which government, labor, and industry work together to create competitive, wordclass industries. Contrary to the prevailing belief, some of the major U.S. economic successes have been due to specific industrial policies. In industries ranging from agriculture to rail transportation, the United States has relied on industrial policies to make it great."

U.S. Congress. House. Committee on Agriculture. Agricultural Trade and Export Policy Commission Act; report to accompany H.J. Res. 600 including cost estimate of the Congressional Budget Office. Washington, G.P.O., 1984. 29 p. (Report, House, 98th Congress, 2nd session, no. 98-956, part 1)

----- Joint hearing before the Committee on Agriculture, the Committee on Foreign Affairs and the Committee on Ways and Means, 98th Congress, 2nd session on H.R. Res. 600. July 26, 1984. Washington, G.P.O., 1984. 164 p.

"Serial no. 98-77"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Department Operations, Research, and Foreign Agriculture. Agricultural exports. Hearings, 97th Congress, 1st session, Washington, G.P.O., 1981. 511 p.

"Serial no. 97-S"

Hearings held June 25, 1981 on export market development needs; July 8, 1981 on social, economic and environmental impact; [and] July 28, 1981 on policy isues and options.

U.S. Congress. House. Committee on Agriculture. Subcommittee on Tobacco and Peanuts. Review of export promotion credit programs. Hearing, 98th Congress, 2nd session. Mar. 7, 1984. Washington, G.P.O., 1984. 61 p.

"Serial no. 98-59"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Wheat, Soybeans, and Feed Grains. Export Grain Bank. Hearing, 97th Congress, 1st session on H.R. 2901. Sept. 29, 1981. Washington, G.P.O., 1982. 101 p.
"Serial no. 97-MM"

U.S. Congress. House. Committee on Ways and Means. Wine Equity and Export Expansion Act of 1984; report to accompany H.R. 3795 including cost estimate of the Congressional Budget Office. Washington, G.P.O., 1984. 18 p. (Report, House, 98th Congress, 2nd session, no. 98-1091)

U.S. Congress. House. Committee on Ways and Means. Subcommittee on Trade. Market expansion for U.S.-produced wine. Hearing, 98th Congress, 2nd session. July 24, 1984. Washington, G.P.O., 1985. 355 p.
"Serial 98-96"

U.S. Congress. House. Select Committee on Hunger. Food aid and the role of the private voluntary organizations. Hearing, 99th Congress, 1st session. Apr. 18, 1985. Washington, G.P.O., 1985. 97 p.
"Serial no. 99-1"

U.S. Congress. Joint Economic Committee. Subcommittee on Trade, Productivity, and Economic Growth. How to save the international trading system. Hearing, 98th Congress, 2nd session. Part 3. Sept. 20, 1984. Washington, G.P.O., 1984. 24 p. (Hearing, Senate, 98th Congress, 2nd session, S. Hrg. 98-883, part 3)

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Agricultural Export Equity and Market Expansion Act of 1983; report to accompany S. 822. Washington, G.P.O., 1983. 103 p. (Report, Senate, 98th Congress, 1st session, no. 98-27)

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Subcommittee on Foreign Agricultural Policy. Agricultural trade legislation. Hearing, 98th Congress, 2nd session, on S. 2005 and S. 2304. Feb. 23, 1984. Washington, G.P.O., 1984. 117 p. (Hearing, Senate, 98th Congress, 2nd session, S. Hrg. 98-814)

----- Economic impact of agricultural embargoes. Hearings, 97th Congress, 2nd session. Feb. 3 and 5, 1982. Washington, G.P.O., 1982. 1982. 128 p.

U.S. Congress. Senate. Committee on Banking, Housing and Urban Affairs. Subcommittee on International Finance and Monetary Policy. Agricultural embargoes and the sanctity of contracts. Hearing, 97th Congress, 2nd session. July 29, 1982. Washington, G.P.O., 1982. 128 p.
"97-70"

U.S. Congress. Senate. Committee on Commerce, Science, and Transportation. Subcommittee on Merchant Marine. Cargo preference laws. Hearing, 99th Congress, 1st session on S. 664. May 6, 1985. Washington, G.P.O., 1985. 133 p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-269)

U.S. General Accounting Office. Compendium of GAO reports pertaining to Public Law 480 from July 1973 through August 1985; study by the staff of the U.S. General Accounting Office. Sept. 12, 1985. Washington, G.A.O., 1985. 57 p.
"GAO/NSIAD-85-96"
"This compendium contains background information on Public Law 480 and abstracts of GAO reports directly related to the Food for Peace program."

Wehr, Elizabeth. Can a soy-based farm policy halt U.S. agriculture's slide? Congressional quarterly weekly report, Aug. 11, 1984: 1959-1962.

"For the Reagan Administration, which has made freer markets for farm products an important policy objective, the vigor of the soybean industry makes a compelling case for withdrawing government support from other commodities." Analyzes the success of soybeans and presents pro-con views on a broad free market policy.

----- Large surplus, falling trade prompt review of methods to reassure foreign clients. Congressional quarterly weekly report, v. 40, Nov. 27, 1982: 2909-2913.
Examines efforts to increase the export of surplus U.S. farm goods.

Yeaney, Timothy. Exporting surpluses: a threat to food security? Washington, Bread for the World, 1984. 4 p. (Background paper no. 74)
Argues that "agricultural policies based on aggressive promotion and subsidies for exports aggravate rather than alleviate problems facing hungry people and U.S. agriculture."

III. RESOLVED: THAT THE FEDERAL GOVERNMENT SHOULD GUARANTEE AN ANNUAL CASH INCOME TO FARMERS IN THE UNITED STATES.

A. Background on U.S. Farm Income

Banker, Ellen. Financial stress on the farm: how serious is it? Farmline, v. 6, Nov. 1985: 4-6.
"Some 214,000 American farms begain this year unable to pay last year's bills. That's 12 percent of the farms that were covered in a major survey conducted by the Agriculture Department early this year. This survey pinpoints financially stressed farms by type, size, and geographic distribution."

Bettner, Jill. The corn is back. Forbes, v. 132, Sept. 10, 1984: 66-68, 70, 74.
"All the troubles of the heartland's farmers may not be solved, but in Dallas County, Iowa there are strong signs that the worst is over and better times are coming." Reports that farmers in this county, who have little debt, have rising economic prospects.

Characteristics of the rural and farm-related population. Washington, U.S. Dept. of Commerce, Bureau of the Census, [for sale by the Supt. of Docs., G.P.O.] 1985. 195, 37 p.
At head of title: 1980 Census of Population, v. 2. Subject reports.
"PC80-2-9C, issued July 1985"
Tables list selected characteristics of rural farm residents by self-employment income, by race and Spanish origin, by age and sex for the Census regions of the U.S.

Daschle, Thomas, John R. Block, and Tom Nichols. Farm depression. New York, WNET/Thirteen, 1982. 8 p.
The MacNeil/Lehrer Report, May 5, 1982.
Panelists include Rep. Thomas Daschle, John Block, the Secretary of Agriculture and Tom Nichols, a Nebraska farmer. They address the question "why do farmers deserve special emergency help?"

Depression in rural America. Edited by Linda Siderius and Sherry Leach. Denver, National Farmers Union, 1982. 41 p.
Summarizing the results of nine field hearings held by the National Farmers Union, this report presents the views of family-scale operators in their own words. The appendix presents the results of an American Bankers Association poll on agricultural credit conditions.

Economic aspects of losses in agriculture, 1979-1983. Beltsville, Md., National Agricultural Library, 1984. 26 p. (Quick bibliography series)
"NAL-BIBL. 84-40"
Lists 245 citations from the AGRICOLA database.

Ehrbar, Aloysius. Facts vs. the furor over farm policy. Fortune, v. 112, Nov. 11, 1985: 114-118, 120.
"The heartland of America is bleeding. The challenge for lenders and politicians is to balance compassion with the realization that not all farmers can be saved."

Elo, Irma T., and Calvin L. Beale. Natural resources and rural poverty: an overview. Washington, National Center for Agricultural Policy, Resources for the Future 1985 ca. 130 p. in various pagings. (Rural development, poverty, and natural resources workshop paper series)
"The relative importance of natural-resource industries in the rural economy has declined dramatically during the last three to four decades. By 1980, the combined employment in agriculture, fishing, mining, forestry, logging, wood products, paper, and food processing had dropped to only 16 percent of all rural employment from over 40 percent in 1950." This paper points out that relationships between natural resources and poverty can be seen when data are analyzed by regional, occupational, ethnic, or other characteristics.

Farm income. Agricultural outlook, no. AO-116, Jan.-Feb. 1986: 18-21.
Presents data on farm income and cash flow 1982-1985, with projections for 1986.

Jolly, R. W., and D. G. Doye. Farm income and the financial condition of United States agriculture. Columbia, Mo., Food and Agriculture Policy Research Institute, 1985. 42 p.
"FAPRI staff report no. 8-85"
Comments that the widespread farm debt problem is primarily one of an unavoidable transition between two states of the economy. Suggests that financial policies might buy time to ease debt and asset restructuring and/or encourage investor activity in agriculture.

Logsdon, Gene. Amish economics: a lesson for the modern world. Whole earth review, no. 50, spring 1986: 74-82.
Describes the Amish way of life, expecially the success of Amish farms. "Amish farmers are still makiang money in these hard times despite (or rather because of) their supposedly outmoded, horse-farming ways."

U.S. Congress. Joint Economic Committee. The economic evolution of agriculture; statements. Washington, G.P.O., 1985. 127 p. (Print, Senate, 98th Congress, 2nd session, joint committee print S. Prt. 98-274)

U.S. Dept. of Agriculture. Economic Research Service. Economic indicators of the farm sector: national financial summary, 1984. Washington, The Service, for sale by the Supt. of Docs., G.P.O., 1986. 85 p.
"ECIF 4-3"
"This report details farm earnings, farm assets, and liabilities in 1984. It treats the farm sector as one business enterprise so that meaningful financial comparisons can be made from one year to the next, and the relative health of U.S. agriculture itself can be assessed apart from nonagricultural and family considerations."

Warf, Barney. Nonmetropolitan growth in the United States: a bibliography. Chicago, CPL Bibliographies, 1985. 11 p. (CPL bibliography no. 162)

Wong, Jan. Many farmers are prospering in New England. Wall street journal, Feb. 12, 1986: 6.
Describes how, "by diversifying into such crops as cranberries and blueberries, sweet corn and apples, and selling their produce directly to the consumer, New England farmers have bucked the national trend."

B. Philosophies and Policy Tools of a Guaranteed Annual Cash Income

A Guaranteed annual income: evidence from a social experiment. Edited by Philip K. Robins . . . et al. New York, Academic Press, c1980. 330 p. (Quantitative studies in social relations)

The seventeen essays in this book provide an introduction to the concept and discuss its effects on labor supply and family behavior.

Bawden, D. Lee, and William S. Harrar. Purpose and design of the Rural Income Maintenance Experiment. American journal of agricultural economics, v. 59, Dec. 1977: 855-858.

"The primary objective of the RIME was to measure the effect of alternative tax rates and minimum guarantees upon the work behavior of rural residents, both wage-earners and farmers."

Boggess, W. G., and E. O. Heady. A sector analysis of alternative income support and soil conservation policies. American journal of agricultural economics, v. 63, Nov. 1981: 618-628.

"For nearly five decades Congress has attempted to legislate both higher farm incomes and soil conservation. A national, interregional, demand-endogenous, separable programming model is used to analyze the potential of alternative policies to achieve simultaneously the dual goals of increased farm income and reduced soil erosion. The analysis indicates that a conservation-oriented land retirement policy can be designed to achieve an increase in net farm income equivalent to a traditional general land retirement policy, while simultaneously achieving significant reductions in gross soil erosion, chemical input use, and direct government program costs."

Bullock, J. Bruce. Future directions for agricultural policy with discussion by W.D. Dobson. American journal of agricultural economics, v. 66, May 1984: 234-241.

Bullock advocates separation of income support and price stabilization objectives and concludes that the government's role is to generate and distribute information about supply and demand, and to develop and operate institutions to help agricultural producers manage risk. Dobson supports Bullock's views and suggests that incentives for phasing out farm programs be investigated.

Canada's western grain stabilization program: an option for U.S. farm policy? Washington, Congressional Budget Office, 1984. 22 p.

Reprinted in this volume.

Diversity in crop farming: its meaning for income-support policy; special study. Washington, Congressional Budget Office, 1985. 52 p.

"The Federal Government currently provides direct income support to farmers producing feed grains, wheat, rice, and cotton by offering deficiency payments based on amount of production. This report examines alternative income-support policies. A policy of targeting income support to low-income farmers could be combined with the present policy of stabilizing prices and incomes for all farmers."

Excerpted in this volume.

Farm Revenue Insurance: an alternative risk-management option for crop farmers. Washington, U.S. Congressional Budget Office, 1983. 32 p.

"Beyond their expense, current programs are not very effective in reducing the income instability caused by international events and conditions." This report examines the role that revenue insurance could play in agricultural policy.

Frederick, A. L., and R. G. F. Spitze. The future of farm price and income-support programs. East Lansing Michigan State University, Cooperative Extension Service, 1984. 8 p. (Farm and food system in transition, FS11)

Briefly reviews the need for price and income support programs, characterizes and evaluates the Federal Government's response to this need, and discusses probable future problem areas.

How can the Federal Government best decrease poverty in the United States? National debate topic for high schools, 1984-1985 pursuant to Public Law 88-245. Washington, G.P.O., 1984. 850 p. (Document, Senate, 98th Congress, 2nd session, no. 98-25)

See pp. 233-523, which cover the proposition that the Federal government should guarantee a minimun annual cash income to all United States citizens.

How I'll stay alive in '85. Farm journal, v. 108, Dec. 1984: 13-17.

Presents thirteen brief profiles of farmers from around the country "looking and finding ways to shift some of their risk to others and to put their farm on a firm financial basis."

The implications of different means of agricultural income support. Paris, Organisation for Economic Co-operation and Development, 1983. 80 p.

Report analyzes the effects of different means of agricultural income support from three angles: "with regard to their impact on the agricultural sector itself, on other economic factors and on trade," and focuses on the principal systems applied by governments to support farmers' incomes.

Johnson, D. Gale. International trade and agricultural labor markets: farm policy as quasiadjustment policy. American journal of agricultural economics, v. 64, May 1982: 355-361.

Discusses "the effectiveness of high product prices in either significantly increasing employment in agriculture or in improving the relative income position of farm families" and concludes that high prices, by themselves, do not insure high farm income or slow down the outflow of labor from agriculture.

Learn, Elmer W. Agricultural price and income policy: a need for change. Contemporary policy issues, v. 4, Jan. 1986: 49-61.

"My thesis is that the American agricultural economy in the mid-1980s differs so markedly from earlier times that it is no longer amenable to policy solutions within a framework that is more than 50 years old. The paper begins by discussing agriculture and agricultural policy as they evolved through the mid-1960s. Then the paper describes the 1985 scenario and makes some reference to events in the intervening 20 years. . . . Political and economic conditions today mandate different kinds of policy measures than those used in the past."

Miller, Jeffrey L. A new role for Federal crop insurance. Federal Reserve Bank of Chicago economic perspectives, Sept.-Oct. 1981: 18-23.

Says Federal insurance against crop losses may play a greatly expanded role in the future.

Moynihan, Daniel P. The politics of a guaranteed income; the Nixon administration and the Family assistance plan. 1st ed. New York, Random House, 1973. 579 p.

"In the course of the 91st Congress, the United States almost established a guaranteed income." This book analyzes the developments that led to the defeat of the Family Assistance Plan.

Schertz, Lyle P., and Kenneth C. Clayton. Alternatives to current commodity programs. In U. S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Farm policy perspectives: setting the stage for 1985 agricultural legislation. Washington, G.P.O., 1984. pp. 97-118. (Print, Senate, 98th Congress, 2nd session, committee print S. Prt. 98-174)

Reprinted in this volume.

Sheahen, Allan. Guaranteed income : the right to economic security. Los Angeles, GAIN Publications, c1983. 278 p.

Contents.--A hope or a threat?--What is a guaranteed income.--Can the U.S. afford a gurarantee income?--What's wrong with the way things are now?--Why don't the current welfare programs work?--How do other countries handle welfare?--Why hasn't the welfare system been changed?--Why should we adopt a guaranteed income?--Why should I work to support welfare chiselers?--Why not guarantee everyone a job?--Why not try other programs?--Will a guaranteed income work?--What about the work ethic?--Is a guaranteed income moral?--What will life be like under a guaranteed income?--Will a guaranteed income threaten democracy?--How does the guaranteed income work?--Can America be convinced?

Trechter, David. The potential role of insurance in U.S. agricultural policy. East Lansing, Michigan State University, Cooperative Extension Service, 1985. 11 p. (Farm and food system in transition, FS49)
Reprinted in this volume.

U.S. Congress. House. Committee on Agriculture. Farm Income Improvement Act; report together with supplemental views to accompany H.R. 6818 including Congressional Budget Office cost estimate. Washington, G.P.O., 1982. 26 p. (Report, House, 97th Congress, 2nd session, no. 97-813)

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Farm policy perspectives: setting the stage for 1985 agricultural legislation. Washington, G.P.O., 1984. 249 p. (Print, Senate, 98th Congress, 2nd session, committee print S. Prt. 98-174)
Includes statements from USDA, farmers, economists, state departments of agriculture, lenders and private industry, as well as two papers on policy alternatives, a summary of legislation which is expiring or becoming effective, and a glossary of agricultural terms.

----- Strengths and weaknesses of the Federal Crop Insurance Corporation. Hearing, 98th Congress, 1st session. Washington, G.P.O., 1984. 112 p. (Hearing, Senate, 98th Congress, 1st session, S. Hrg. 98-902)
Hearing held Dec. 2, 1983, Des Moines, Iowa.

U.S. General Accounting Office. Income maintenance experiments: need to summarize results and communicate the lessons learned; report to the Honorable Daniel P. Moynihan, United States Senate by the Comptroller General of the United States. Washington, 1981. 80 p.
"HRD-81-46, Apr. 17, 1981"
"The Office of Economic Opportunity and the Department of Health and Human Services initiated income maintenance experiments, the first ever in the United States, to measure the extent to which a guaranteed income would reduce recipients' work efforts . . . . The results and many important technical and operational planning and monitoring lessons learned have yet to be consolidated and summarized for the benefit of future researchers."

U.S. Farm Income Protection Insurance Task Force. Farm income protection insurance: a report to the United States Congress. Washington, The Task Force, 1983. 56 p.
This report discusses the concept of farm income protection insurance including an analysis of: the characteristics of a farm income protection insurance program; the feasibility of such a program as a substitute for the commodity price support, income maintenance, and disaster assistance programs administered by the Department of Agriculture for United States farmers; the appropriate roles of private insurance industry and the Federal Government in the development, implementation, and administration of such a program; alternate mechanisms for administering such a program; the acceptibility of such a program to farmers and; the cost associated with the development and implementation of such a program."

Veeman, Michele M., and Terrence S. Veeman. Canadian agriculture in the 1980's. Current history, v. 83, May 1984: 216-219, 231.

Reviews trends in Canadian agriculture, a family-farm-oriented industry. "Improved agricultural policy is needed in several areas: trade liberalization, marketing board reform, strengthened stabilization measures, grain marketing and transportation reform, more effective competition policy, productivity enhancement and environmental improvement."

Vertrees, James G., and Andrew S. Morton. Crop price support programs: policy options for contemporary agriculture. Washington, Congressional Budget Office. 1984. 48 p.

"While agriculture has changed dramatically over the past 50 years, farm programs have not." Conflict exists between the two major policy goals of income enhancement and stabilization of prices and income. This study presents two stabilization options, market-oriented price supports and farm revenue insurance, and two income-enhancement options: production controls and targeted income maintenance. A brief appendix comments on a free-market policy--no farm programs.

IV. RESOLVED: THAT THE FEDERAL GOVERNMENT SHOULD IMPLEMENT A COMPREHENSIVE LONG-TERM AGRICULTURAL POLICY IN THE UNITED STATES.

A. Philosophies and Policy Tools of U.S. Agricultural Policy

Alternative agricultural and food policies and the 1985 farm bill. Edited by Gordon C. Rausser and Kenneth R. Farrell. San Leandro, Calif., Giannini Foundation for Agricultural Economics, 1985. 425 p.

Presents 16 papers and related discussions from a conference sponsored by the Giannini Foundation of Agricultural Economics and National Center for Food and Agricultural Policy, Resources for the Future.

Contents.--Summary and conclusions, by K. Farrell and G. Rausser.--The performance of past policies: a critique, by D. Johnson.--Future agricultural policy: a challenge for all, by W. Lesher.--Discussion, by J. Schnittker.-Policy options for grains, by B. Gardner.--Uncertain economic environments and conditional policies, by R. Just and G. Rausser. --Discussion, by L. Daft.--A 10-point policy agenda for the food and agricultural sector of the United States, by W. Cochrane.--Review and assessment of alternative agricultural policy proposals, by L. Calvin, W. Foster and G. Rausser.--Cotton, by R. Firch.--Tobacco and peanuts, by D. Hoover and D. Sumner.--The U.S. sugar program and its effects, by A. Schmitz, R. Allen, and G. Leu.--Dairy, by E. Babb.--Linkages to the livestock sector, by D. Ray, L. Tweeten, and J. Trapp.--Consistencies, inconsistencies, and other views on commodity policies: a review and critique of preceding papers, by A. McCalla.--Structural dimensions of agricultural policies, by G. Schuh.--Discussion, by R. Chambers.--Resources dimensions of agricultural policy, by C. Benbrook, P. Crosson, and C. Ogg.--Discussion, by R. Howitt.--Food and consumer dimensions of agricultural policy, by D. Heien.--Discussion, by S. Lane.--A general reaction to the evaluation of alternative proposals: general discussion, by S. Johnson.--Ronald D. Knutson.--Alan Randall.

An Analysis of the Food Security Act of 1985. Columbia, Mo., Food and Agricultural Policy Research Institute, 1986. 32 p.

"FAPRI staff report no. 1-86"

Using the FAPRI annual econometric model of the U.S. livestock-crop sector, makes projections for corn, wheat, cotton, rice, soybeans, beef, chicken, pork, and dairy under the Food Security Act for the period 1985/86 through 1988/89. Among conclusions: net farm income will decline during the first three years of the 1985 Farm Act; excess capacity in U.S. agriculture remains high.

Armbruster, Walter J., and Edward V. Jesse. Fruit and vegetable marketing orders. East Lansing, Michigan State University, Cooperative Extension Service, 1984. 8 p. (Farm and food system in transition, FS19)

Reviews the operations and accomplishments of produce marketing orders. Discusses their effects and outlines alternative options for changing current programs.

Balaam, David N. The political economy of farm-food policy: who gets the wheat and who gets the shaft? Congress & the Presidency, v. 11, spring 1984: 69-78.
This review essay discusses D. Gale Johnson's Food and Agricultural Policy for the 1980's, a collection of essays sponsored by the American Enterprise Institute, and Don Hadwiger and Ross Talbot's Food Policy and Farm Programs, a collection sponsored by the Academy of Political Science.

Block, John R. "We're not going to up the ante" on farm program. U.S. news & world report, v. 99, Sept. 2, 1985: 39.
The Secretary of Agriculture discusses the Farm Bill and agricultural policy.

Boehlje, Michael D. Policy options for agriculture. Federal Reserve Bank of Chicago economic perspectives, v. 9, Nov.-Dec. 1985: 29-35.
Reprinted in this volume.

Bullock, J. Bruce. What is the 1985 farm problem? Washington, Cato Institute, 1985. 17 p. (Policy analysis no. 55)
"The solution to the farm problem . . . is to withdraw resources from agriculture until competitive rates of return are achieved. Many farmers and policymakers fail to accept the fact that agricultural production in the United States has evolved from a way of life to a high-technology, capital-intensive business . . . . Price support programs seriously distort the clear signals for long-run adjustment being generated by the market . . . . Existing farm programs were designed to treat the symptoms of the problem via price supports, rather than deal with the overinvestment problem directly."

Carson, Clarence B. The trouble with farming. Freeman, v. 33, May 1983: 286-298.
Concludes that government intervention has greatly aggravated the lot of the farmers, that price supports, crop restrictions and easy credit "strained and distorted the market to produce the current mess." Advocates return to the "unhampered market."

Center for National Policy (Washington, D.C.). Food and Agriculture Policy Study Group. Food and agriculture policies: proposals for change; report of the Center for National Policy's Food and Agricultural Policy study group. Washington, The Center, 1985. 29 p. (Alternatives for the 1980s, no. 16)
Excerpted in this volume.

Chavas, Jean-Paul, and Dale Heien. Future directions for domestic food policy. American journal of agricultural economics, v. 66, May 1984: 225-233.
"Surveys research findings regarding the impacts of domestic food programs; attempts to characterize optimal food policy; specifies a model of optimal transfers and taces the implications of that model." A companion discussion criticizes the model presented and analyzes the research results.

Claassen, Rodger, Ferdinand Hoefner, and Timothy Yeaney. A time for decision: U.S. agriculture policy in transition. Washington, Bread for the World and Interfaith Action for Economic Justice, 1984. 6 p. (Background paper no. 78)
"This paper examines relationships between U.S. agriculture and the U.S. and global food system, highlighting three key areas that will be addressed directly or indirectly in the 1985 farm bill: the structure of agriculture, resource conservation and food security. In each area, the influence of public policies is discussed and directions for reform are suggested."

Cochrane, Willard W. A new sheet of music: how Kennedy's farm adviser has changed his tune about commodity policy and why. Choices: the magazine of food, farm, and resource issues, premiere edition, 1986: 11-15.

Advocates immediate elimination of farm commodity programs; argues that the structure of agriculture has changed substantially over the past 40 years, and explains how the programs themselves influence farm prosperity and ownership. Also identifies the need for government intervention in certain areas of the food and agricultural sector.

Reprinted in the Congressional Record, daily ed., v. 132, Mar. 26, 1986: 53387-53390.

Daft, Lynn M. Lynn Daft on the 1985 farm bill. Choices: the magazine of food, farm, and resource issues, premiere edition, 1986: 39-42.

Reprinted in this volume.

Doig, Don. The farming of Washington: how U.S. agricultural policies affect the American farm. Washington, Cato Institute, 1983. 22 p. (Policy analysis no. 27)

Concludes that "the distortions and dislocations of current agriculture policy stem directly from ill-advised attempts to manipulate markets and subsidize the economic life of a group of businessmen. Most farmers and ranchers have been harmed, not helped, by these policies. It is time to end all agricultural programs and get the government out of farming."

Duncan, Marvin, and Marla Borowski. Agricultural policy: objectives for a new environment. Federal Reserve Bank of Kansas City economic review, June 1984: 20-36.

"Despite the complexity of the issues involved, it has never been more important that policy decisions be forward looking and that they be sufficiently broad to encompass food and fiber policy interests, not just narrowly defined farm interests. This article asserts that the changed policymaking environment means traditional objectives must be reexamined and revised before appropriate agricultural programs can be formulated. . . . More attention should be given policies and programs that further export market growth, efficient and reasonably full use of agricultural resources, adjustment to change, and management of instability."

Eason, Henry. Farm problems: the answer. Nation's business, v. 73, May 1985: 18-22, 25.

"An infusion of still more federal dollars could turn agriculture --America's largest economic sector--into another declining industry." This article on U.S. agricultural policies presents the views of farmers and government officials who oppose Federal intervention in agriculture.

Farm policy--the 1985 farm bill. American journal of agricultural economics, v. 66, Dec. 1984: 567-576.

"Proceedings from the annual meeting of the American Agricultural Economics Association held 5-8 August 1984 in Ithaca, New York."

Contents.--International trade environment for food and agriculture in the late 1980s, by J. Hillman.--Agricultural structural issues and policy alternatives for the late 1980s, by J. Penn.

Flinchbaugh, B. L., and Mark A. Edelman. The changing politics of the farm and food system. East Lansing, Michigan State University, Cooperative Extension Service, 1984. 7 p. (Farm and food system in transition, FS26)

Reprinted in this volume.

The Food Security Act, Gramm-Rudman-Hollings and the U.S. agricultural economy; policy briefing summary. Washington, National Center for Food and Agricultural Policy, Resources for the Future, 1986. 14 p.

Briefly describes the Food Security Act and examines some of its consequences. Presents estimates for certain commodities using the FAPRI econometric model. Comments on policy dilemmas inherent in the FSA even apart from Gramm-Rudman-Hollings; the law does not resolve conflicts between desiring to enhance farm income and reduce budget costs, and may not cut production sufficiently.

Food stamps and hunger. New York, WNET/Thirteen, 1983. 8 p.
The MacNeil/Lehrer Report, Aug. 2, 1983.
Interview with Nancy Amidei of the Food Research and Action Center, Sec. of Agriculture John Block, Sen. William Armstrong, and Rep. Leon Panetta.

Fulton, Tom. Reversion to permanent legislation after 1985. Policy research notes, no. 18, Nov. 1984: 16-24. [Available through University of Illinois of Urbana--Champaign. Agricultural Experiment Station, Urbana, Illinois, 61801]
"If the farm and food legislation expiring in 1985 is not replaced, commodity price and income supports will revert to programs provided for in permanent legislation dating in some cases to the 1930's. Permanent legislation would raise support levels and reduce the role of market forces in determining farmer returns." Article describes the permanent legislation's commodity program provisions and discusses how various commodities would be affected. Outlines other program changes under reversion.

Gardner, Bruce. The farm problem and the taxpayers' problem. AEI economist, June 1985: whole issue (4 p.)
The author recommends the ending of the traditional agricultural commodity programs, beginning in 1985.

Grafstein, Laurence. Farm control: mobile money or fixed-price silos? New republic, v. 189, Aug. 8, 1983: 8-10.
"Price supports, deficiency payments, and Block's personal PIK project all work in favor of the larger farmer, at considerable expense to everyone else. The notion that those who produce more are entitled to more is one thing. The notion that those who produce more are entitled to more government assistance is another."

Hadwiger, Don F., and Ross B. Talbot, eds. Food policy and farm programs. New York, Academy of Political Science, 1982. 254 p.
A series of 20 articles by 28 contributors addresses policy aspects of national food issues, the farmer and the government, and the future of agriculture.

Hardin, Clifford M. PIK: jerry-rigging an obsolete farm program. St. Louis, Washington University, Center for the Study of American Business, 1983. 15 l.
"In spite of government help, and in some cases because of government actions, the farm economy is in serious trouble." The report concludes that "this is an appropriate time to break the chains of 50 years of history and tradition and create a new, thoroughly modern farm program--one that eliminates the counterproductive use of high price supports and production controls--one that utilizes to the fullest the efficiency and high productivity of the American farmer."

Hill, Stuart. Redesigning the food system for sustainability. Alternatives, v. 12, spring-summer 1985: 32-36.
Describes some characteristics of a sustainable food system. The primary goal is nourishment, other goals include "fulfillment, justice, flexibility, evolution and sustainability."

Issues in 1985 agricultural legislation. Washington, American Enterprise Institute for Public Policy Research, 1985. 25 p. (Legislative analysis no. 54, 99th Congress)

Economic problems in U.S. agriculture include a $10 billion decline in annual farm exports in the 1980s, accumulating government stocks of grain and dairy products, a $12 billion annual budgetary cost of the current programs, excess supplies of many commodities, and the "credit crisis" of 1984-85. This analysis reviews legislative proposals on export promotion, loan rates, target prices and deficiency payments, production controls, aid to financially pressed farmers, dairy and other commodity proposals, and it assesses their pros and cons.

Lenard, Thomas M., and Michael P. Mazur. Harvest of waste: the marketing order program. Regulation, v. 9, May-June 1985: 19-26.

Since 1983 Congress has used a legislative rider to prohibit OMB from spending any money to review marketing orders: "Congress has chosen to give this special dispensation to one of the most blatant of all self-seeking special interest programs."

Lin, William, James Johnson, and Linda Calvin. Farm commodity programs: who participates and who benefits? Washington, U.S. Dept. of Agriculture, Economic Research Service [for sale by the Supt. of Docs., G.P.O.] 1981. 74 p. (Agricultural economic report no. 474)

"Ten percent of the participants in U.S. commodity program for wheat fed grains, cotton, and rice received 47 percent of the 1978 payments. Those farms were the largest participants, having 500 acres or more of crops. The smallest 50 percent of participants received 10 percent of payments. Proposals to prohibit payments to corporations would not have a significant impact because few corporations grow program commodities."

Luttrell, Clifton. Government crop programs: high cost and few gains. Washington, Cato Institute, 1985. 18 p. (Cato policy analysis no. 56)

Reprinted in this volume.

McMenamin, Michael. Tedious fraud: Reagan's farm policy and the politics of agricultural marketing orders. Washington, Cato Institute, 1983. 15 p. (Cato policy analysis no. 30)

The author opposes the concept of marketing orders. "Volume-control marketing orders should be viewed as a symbol of the intellectual bankruptcy of U.S. farm programs--policies of farmers, by farmers, for farmers and no one else."

McMillan, C. W. The future of food and agriculture policy. Food drug cosmetic law journal, v. 40, Jan. 1985: 77-84.

The author, USDA Assistant Secretary for Marketing and Inspection service, presents policy directions favored by the Dept. of Agriculture for the 1985 farm bill.

Meter, Ken. Writing farm policy: land and communities, not myth, should be its basis. American land forum magazine, v. 6, winter 1986: 54-60.

"Farm policy currently supports myths far better than it supports farmers." Examines eight of the "most prevalent myths in the current political debate" and enumerates the outcomes of "proper farm policy."

National Agricultural Forum. Domestic Policy-Aternatives Task Force. Alternatives for U.S. food and agricultural policy. Second draft, released December 4, 1984. Washington, Agriculture Council of American Education Foundation, 1985. 154 p.

Contents.--The agricultural economy & government involvement.--Food and agricultural policy interest groups.--A goal for food and agricultural policy & evaluated policy alternatives for the eighties.--Conclusions. Twenty-three experts from diverse backgrounds contributed to this report.

New Deal farm legislation after fifty years and lessons for the future. American journal of agricultural economics, v. 65, Dec. 1983: 1153-1173.

Contents.--Conceptualization and climate for New Deal farm laws of the 1930s, by H. Breimyer.--The New Deal farm programs: what they were and why they survived, by W. Rasmussen.--Effects of New Deal farm programs on the agricultural agenda a half century later and prospect for the future, by D. Paarlberg.--Institutional innovation and technical change in American agriculture: the role of the New Deal, by K. Farrell and C. Runge.

1985 farm policy: critical choices. Minneapolis, Minn., Cargill, Incorporated, [1984] 23 p.
Reviews some of the major components of existing U.S. farm policy and discusses the successes and failures associated with each.

Pasour, E. C., Jr. The free market answer to U.S. farm problems. Washington, Heritage Foundation, 1984. (Backgrounder no. 389)
"U.S. agricultural policies have been designed to raise product prices above the market price ever since the New Deal era. Today's agricultrual surpluses can be attributed directly to government price support programs in which farm product prices have been supported at artificially high levels . . . . In a more open economy, milk, wheat, sugar, and other product prices would fall, reflecting underlying demand and supply conditions."

----- The high cost of farm subsidies. Washington, Heritage Foundation, 1984. (Backgrounder no. 388)
"Government outlays for farm price stabilization programs alone increased from $4 billion in 1981 to about $20 billion in 1983 . . . . As the 1985 deadline approaches for a new farm bill, U.S. agriculture policy stands at a crossroads with a choice of two basic ways to go: (1) The nation can continue and expand existing programs, in which farm income is heavily dependent on government through direct income transfers and government-sanctioned restrictions on competition; or (2) it can rely on the market place to bring about appropriate adjustments in production and resources allocation."

Pfeffer, Max J. Industrial farming. Democracy, v. 3, spring 1983: 37-49.
"Agricultural policy alternatives commonly promoted by Congress foster the concentration of farm production, and this trend, when taken to its logical conclusion, will result in industrial farming. The development of industrial farming will depend on the perpetuation of existing social inequality and perhaps even the creation of more pronounced forms of inequality. This much should be clear: the development of industrial farming should be resisted if there is to be a movement toward a more egalitarian and democratic society."

Possible economic consequences of reverting to permanent legislation or elimantory price and income supports. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1985. 86 p. (Agricultural economic report no. 526)
"If the agricultural legislation expiring in 1985 is not replaced, farm price and income supports will revert from the programs provided for the Agriculture and Food Act of 1981 and subsequent legislation to the programs provided for in the permanent support statutes. Reverting to the permanent support programs, dating back in some cases to the 1930's, would raise price and income support levels significantly and greatly reduce the role of market forces in determining farm returns. Conversely, if all price and income supports were eliminated in 1985, Government intervention in the market would end and supply and demand forces would determine farm returns. Adopting either of these two outerbound policy alternatives would have significant and far-reaching impacts on farm operations, the agribusiness sector, the general economy, and ultimately the world market for farm products."

President's Private Sector Survey on Cost Control (U.S.) Report on the Department of Agriculture. Approved by the Subcommittee for the full Executive Committee, spring-fall 1983. Washington, the Survey, 1983. 297 l.

Partial contents.--Farmers Home Administration.--Food and Nutrition Services.--Agricultural Marketing Service (AMS).--Foreign and domestic commodity programs.--Local USDA programs.--Forest Service.--Science and Education Administration.--Rural Electrification Administration.

Prospects for fundamental change in farm and food programs. American journal of agricultural economics, v. 67, May 1985: 331-355.

Contents.--Will USDA farm programs remain highly resistant to change? by W. Dobson.--Structuring incentives for change in U.S. farm programs, by B. Gardner.--Needed changes in the Farmers Home Administration lending programs, by P. Barry.--Food program policy initiatives in an era of farm surpluses, by S. Hiemstra.--Discussion by J. Bruce Bullock, Eddy LaDue, and Benjamin Senauer.

Rauch, Jonathan. A rock and a hard place. National journal, v. 17, Sept. 7, 1985: 1981-1984.

Describes some of the political problems which Congress faces in passing a farm bill.

----- Writing a blank check. National journal, v. 17, Mar. 23, 1985: 625-631.

"Under current agriculture policy, the federal government has little real control over farm spending and no effective way to anticipate the policy's cost." Article describes difficulties resulting from farm policy entitlement programs and alternative proposed legislation.

Rausser, Gordon C., and William E. Foster. Agricultural policy: a synthesis of major studies and options for 1985. Washington, National Center for Food and Agricultural Policy and National Agricultural Forum, 1984. 87, 10 p.

Discusses the goals of farm policy and policy tools, and reviews major studies and conferences under alternate states of the world.

Regenerating the food system: a food and agricultural policy for the United States--a framework for discussion. Emmaus, Pa., Cornucopia Project, Rodale Press, c1984. 21 p.

"The concept of regenerative food system embodies sustainability and a building up or regeneration of soil, resources, ecosystems and the livelihood of farmers. In this document, The Cornucopia Project attempts to set forth specific ways of implementing change that will create a regenerative food and agriculture system which will supply bountiful, nutritious, and affordable food for everyone."

Rural Coalition. Beyond crisis: farm and food policy for tomorrow. Washington, The Coalition, 1984. 28 p.

Presents the collective recommendations of diverse groups who believe that "federal policy can and should foster and encourage the family farm system of agriculture, promote responsible stewardship of valuable soil and water resources, enhance world food security, and guarantee access to adequate food for those without means to purchase or produce it." Makes policy proposals on "the structure of agriculture, resource conservation, world food security, and domestic food assistance."

Saunders, Dero A. "The yields were spectacular." Forbes, v. 137, Jan. 27, 1986: 60-63.

Describes the prosperity of farms and the bank, First National, of Dwight, Illinois. Lambasts the Food Security Act of 1985 for lacking "direct steps to remove farms from their 50-year-old government-supported economy to an economy of the marketplace."

Sawyer, Jon. The political harvest. Inquiry (Washington, D.C.), v. 6, Nov. 1983: 20-25.

"Ronald Reagan promised to deliver a free market in agriculture. Instead, we've got massive grain giveaways, higher price supports, and even more regulation."

Schuyler, Michael W. The politics of change: the battle for the Agricultural Adjustment Act of 1938. Prologue, v. 15, fall 1983: 164-178.

Services available through the U.S. Department of Agriculture. Washington, Dept. of Agriculture, Office of Governmental and Public Affairs, 1984. 23 p. (Program aid no. 1336)

This directory lists 49 programs and services offered by USDA, explaining what the programs and services do and where and how to obtain them. The information is organized into seven categories: farms, forest, markets, communities, consumers, business and industry, and resources.

Shaffer, James D., and Judith I. Stallmann. Domestic food & nutrition programs: sorting out the policy issues. East Lansing, Michigan State University, Cooperative Extension Service, 1983. 8 p. (Farm and food policy in transition, FS13)

Reprinted in this volume.

Spitze, R. G. F., and James A. Zellner. Agricultural policy: views of national interest group leaders and organizations Policy research notes, no. 19a, Feb. 1985: whole issue (136 p.) [Available through the University of Illinois at Urbana-Champaign Agricultural Experiment Station, Urbana, Illinois, 61801]

Begins with a 13-page report by R.G.F. Spitze which summarizes findings from a fall 1984 survey of 400 national agricultural interest group leaders. Continues with a catalog-like report by Mark F. Weber which summarizes the views of over seventy organizations concerned with the 1985 farm bill. He briefly describes each group and then presents their opinions.

Stokes, Bruce. A divided farm lobby. National journal, v. 17, Mar. 23, 1985: 632-637.

"The stark choice between a market-oriented farm policy and one with continued substantial government intervention has broken the farm lobby into two rival camps."

Stueker, Barbara C., and Keith J. Collins. The Food Security Act of 1985: major provisions affecting commodities. Washington, National Economics Division, Economic Research Service, U.S. Dept. of Agriculture, 1986. 22 p. (Agriculture information bulletin no. 497)

This bulletin summarizes major provisions of the Food Security Act of 1985 and highlights changes from previous legislation. Designed to improve the market orientation of U.S. farm policy, the act "continues target prices, but they are scheduled to decline over the life of the act; specifies acreage reduction programs when stocks exceed certain levels; attempts to control erosion and prevent farm production on erodible croplands and wetlands; gives the Secretary of Agriculture wide latitude in implementing commodity programs."

Thompson, James F., and W. Frank Edwards. Dairy policy and public interest: the economic legacies. Washington, Cato Institute, 1985. 27 p. (Policy analysis no. 57)

"The original government intention of providing only temporary assistance to the dairy farmer during an adjustment period has failed. The 'temporary' measures have become permanent, and the surplus milk problem has gotten steadily worse. This always happens, sooner or later, when the government attempts to thwart the laws of supply and demand."

U.S. agricultural policy: the 1985 farm legislation. Edited by Bruce L. Gardner. Washington, American Enterprise Institute for Public Policy Research, 1985. 385 p. (AEI symposia 85C)

Conference papers stress three themes: one current problems in agriculture are related to macroeconomic events notably Federal budget deficit, inflation, interest and exchange rates; second "the extensive integration of U.S. agriculture with the world economy that has occurred since 1970 has fundamentally altered the market situation of farmers and placed new constraints upon farm policy" and third "it is now more crucial than ever to have commodity programs consistent with market realities."

U.S. Congress. Conference Committees, 1985. Food Security Act of 1985; conference report to accompany H.R. 2100. Washington, G.P.O., 1985. 616 p. (Report, House, 99th Congress, 1st session, no. 99-447)

U.S. Congress. House. Committee on Agriculture. Economic conditions in agriculture and fiscal year 1986 Department of Agriculture budget proposals (Secretary John R. Block). Hearing, 99th Congress, 1st session. Feb. 21, 1985. Washington, G.P.O., 1985. 99 p.
"Serial no. 99-2"

----- Long-term farm policy to succeed the Agriculture and Food Act of 1981 (Agricultural Efficiency and Equity Act of 1983). Hearing, 98th Congress, 2nd session, on H.R. 4565. Part 2. May 2, 1984. Washington, G.P.O., 1984. 197 p.
"Serial no. 98-70"

----- Long-term farm policy to succeed the Agriculture and Food Act of 1981 (regional agricultural conditions). Hearings, 98th Congress, 2nd session. Part 3. Washington, G.P.O., 1984. 1078 p.
"Serial no. 98-70"

----- Long-term farm policy to succeed the Agriculture and Food Act of 1981. Hearings, 98th Congress, 2nd session. Part 1. Feb. 28 and 29, 1984. Washington, G.P.O., 1984. 940 p.
"Serial no. 98-70"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Conservation, Credit, and Rural Development. Long-term farm policy to succeed the Agriculture and Food Act of 1981 (Conservation and credit programs). Hearings, 98th Congress, 2nd session. Part 4. Washington, G.P.O., 1984. 326 p.
"May 4, 1984, Selma, AL; July 6, 1984, Indianola, IA; October 8, 1984, Washington, IN"
"Serial no. 98-70"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Cotton, Rice, and Sugar. Long-term farm policy to succeed the Agriculture and Food Act of 1981 (cotton and rice programs). Hearing, 98th Congress, 2nd session. Part 8. Washington, G.P.O., 1984. 57 p. Hearing held in Kennett, Mo., Sept. 24, 1984.
"Serial no. 98-70"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Livestock, Dairy, and Poultry. Long-term farm policy to succeed the Agriculture and Food Act of 1981 (livestock and dairy programs). Hearings, 98th Congress, 2nd session. Part 9. Washington, G.P.O., 1984. 168 p.
"Serial no. 98-70"
Hearings held Mar. 9, 1984, Mason City, Iowa [and] Mar. 10, 1984, Ottumwa, Iowa.

U.S. Congress. House. Committee on Agriculture. Subcommittee on Tobacco and Peanuts. Long-term farm policy to succeed the Agriculture and Food Act of 1981 (peanut price support program). Hearings, 98th Congress, 2nd session. Part 7. Washington, G.P.O., 1984. 166 p.
"Serial no. 98-70"
Hearings held May 21, 1984, Ahoskie, N.C.; June 1, 1984, Albany, Ga.; July 12, 1984, Headland, Ala. [and] Sept. 24, 1984, Pleasanton, Tex.

U.S. Congress. House. Committee on Agriculture. Subcommittee on Wheat, Soybeans, and Feed Grains. Long-term farm policy to succeed the Agriculture and Food Act of 1981 (wheat, soybeans, and feed grains programs). Hearings, 98th Congress, 2nd session. Part 6. Washington, G.P.O., 1984. 384 p.

"Serial no. 98-70"

Hearings held Apr. 9, 1984, Great Galls, Mont.; May 7, 1984, Oklahoma City, Okla.; July 3, 1984, Sioux City, Iowa.

U.S. Congress. House. Committee on the Budget. The effects of the 1986 Federal budget on agriculture and rural America. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1985. 523 p.

"Serial no. 99-8"

Hearings held in Blue Springs, MO and McAlester, OK on Mar. 22, and Jonesboro, AR and Edgefield, SC on Mar. 23, 1985.

----- Impact of budget proposals on agriculture and farm commodities issues. Hearing, 99th Congress, 1st session. Washington, G.P.O., 1985. 226 p.

"Serial no. 99-5"

Hearing held Feb. 5, 1985, Atchison, Kan.

----- Impact of budget proposals on agriculture issues. Hearing, 99th Congress, 1st session. Feb. 11, 1985. Washington G.P.O., 1985. 197 p.

Hearing held in Lansing, MI.

"Serial no. 99-2"

U.S. Congress. Joint Economic Committee. Agricultural conditions and the rural economy. Hearing, 99th Congress, 1st session. Feb. 25, 1985. 490 p. Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-101

----- The economic evolution of agriculture; statements. Washington, G.P.O., 1985. 127 p. (Print, Senate, 98th Congress, 2nd session, joint committee print S. Prt. 98-274)

----- Toward the next generation of farm policy. Hearings, 98th Congress, 1st session. Part 3. Washington, G.P.O., 1984. 1384 p. (Hearings, Senate, 98th Congress, 1st session, S. Hrg. 98-425, part 3)

----- Toward the next generation of farm policy. Hearings before the Joint Economic Committee and the Subcommittee on Agriculture and Transportation of the Joint Economic Committee, Congress of the United States, Ninety-eighth Congress, first session. Part 1. Washington, G.P.O., 1983. 290 p. (Hearings, Senate, 98th Congress, 1st session, S. Hrg. 98-425, pt. 1) Hearings held May 19-June 8, 1983.

----- Toward the next generation of farm policy. Hearings before the Joint Economic Committee and the Subcommittee on Agriculture and Transportation of the Joint Economic Committee, Congress of the United States, 98th Congress, 1st session. Part 2. Washington, G.P.O., 1984. 383 p. (Hearings, Senate, 98th Congress, 1st session, S. Hrg. 98-425, part 2)

Hearings held June 14-23, 1983.

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Farm policy perspectives: setting the stage for 1985 agricultural legislation. Washington, G.P.O., 1984. 249 p. (Print, Senate, 98th Congress, 2nd session, committee print S. Prt. 98-174)

Includes statements from USDA, farmers, economists, state departments of agriculture, lenders and private industry, as well as two papers on policy alternatives, a summary of legislation which is expiring or becoming effective, and a glossary of agricultural terms.

----- Framework and analysis for agricultural policy in 1985. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1985. 292 p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-55)

"Hearings held Mar. 12-May 1, 1985.

"Structure of agriculture; loan rates, target prices, supply management, and production controls; impact of technology and research; capital investment, debt, credit, and taxes; and critical analysis of agricultural policy options."

----- Review of the Grace Commission report on the Department of Agriculture. Hearing, 98th Congress, 2nd session. Feb. 22, 1984. Washington, G.P.O., 1984. 55 p. (Hearing, Senate, 98th Congress, 2nd session, S. Hrg. 98-734)

Testimony on the report of the Task Force on the Department of Agriculture.

----- Task force report on the Department of Agriculture (draft report). The President's Private Sector Survey on Cost Control. Washington, G.P.O., 1983. 277 p. (Print, Senate, 98th Congress, 1st session, committee print, S. Prt. 98-76)

The recommendations "include savings of $3.8 billion for three years. This would mean a more than 10 percent reduction in annual outlays if implemented. In addition to budget savings, over $8 billion of Government lending would be transferred to the private sector over the next few years, reducing the Government's risk of losses and easing its need to enter credit markets."

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Subcommittee on Rural Development, Oversight, and Investigations. The efficiency of Federal Programs serving rural areas. Hearing, 98th Congress, 1st session. Washington, G.P.O., 1983. 62 p. (Hearing, Senate, 98th Congress, 1st session, S. Hrg. 98-37)

Hearing held in the Vermont ETV studio in Winooski (with some testimony delivered by telephone) on Feb. 14, 1983.

----- The efficiency of Federal programs serving rural areas. Hearing, 98th Congress, 1st session. Washington, G.P.O., 1983. 70 p. (Hearing, Senate, 98th Congress, 1st session, S. Hrg. 98-219)

Hearing held Apr. 17, 1983--Fargo, N. Dak.

U.S. Congress. House. Committee on Appropriations. Subcommittee on Appropriations. Subcommittee on Agriculture, Rural Development and Related Agencies. Agriculture, rural development and related agencies appropriations for 1986. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1985. 1292 p.

Part 7--Agricultural programs; agricultural research service; Cooperatiave State Research Service; Extension Service; National Agricultural Library; Food and Nutrition Service and Human Nutrition Information Service; Farmers Home Administration and Office of Rural Development Policy; Investigative report.

U.S. Congress. Senate. Committee on Commerce, Science, and Transportation. Application of cargo preference laws relating to the exportation of U.S. agricultural commodities; report together with minority views to accompany S. 721. Washington, G.P.O. 1985. 16 p. (Report, Senate, 99th Congress, 1st session, no. 99-89)

U.S. Congress. Senate. Committee on the Budget. The distribution of benefits from the 1982 Federal crop programs. Washington, G.P.O., 1984. 83 p. (Print, Senate, 98th Congress, 2nd session, S. Prt. 98-238)

U.S. General Accounting Office. The Department of Agriculture's 1983 payment-in-kind program--a review of its costs, benefits, and key program provisions; report to the Honorable George E. Brown, Jr., and the Honorable Pat Roberts. Aug. 29, 1985. Washington, G.A.O., 1985. 99 p.

"GAO/RCED-85-60"

Reports on "seven aspects of the PIK program, including its costs and the distribution of program benefits as well as USDA's justification for key provisions of the program."

----- Food, agriculture, and nutrition issues for planning; study, Washington, G.A.O., 1982. 61 p.
"CED-82-27, Feb. 4, 1982"
"Examines current and emerging issues concerning Federal involvement in food, agriculture, and nutrition policy and discusses the perspective GAO plans to use in organizing its audits."

----- Food inventories: inventory management of federally owned and donated surplus foods; report to Congressional requestors. Dec. 1985. Washington, G.A.O., 1985. 86 p.
"GAO/RCED-86-11
"As a result of its dairy price-support purchases, the U.S. Department of Agriculture's (USDA's) inventory of dairy products grew from $570 million in September 1979 to $4.1 billion in September 1984 . . . . GAO reviewed USDA's and four states' inventory management systems to determine whether the systems assured that products owned by USDA and special distribution program products provided to the states were properly controlled and USDA minimized transportation and storage costs."

----- Overview of the dairy surplus issue--policy options for congressional consideration; report to the Congress by the Comptroller General of the United States. Sept. 18, 1985. Washington, G.A.O., 1985. 55 p.
"GAO/RCED-85-132"
"Unless the government adopts policies that will reduce economic incentives attracting resources into dairy farming, burdensome surpluses and high government costs will likely continue. GAO presents, for congressional consideration, an analysis of several policy options for dealing with the problem."

----- The role of marketing orders in establishing and maintaining orderly marketing conditions; report to the Congress by the Comptroller General of the United States. July 31, 1985. Washington, G.A.O., 1985. 98 p.
"GAO/RCED-85-57"
"This report discusses the role of federal marketing orders in creating and maintaining orderly markets for fruits, vegetables, and specialty crops. The report examines the use of quantity and quality control provisions and their impact on controlling supplies, the trend toward greater use of quality control and market support provisions and their impact on increasing demand, and the role of the U.S. Department of Agriculture in administering and reviewing marketing orders."

U.S. General Accounting Office. Summary of GAO reports issued since 1981 pertaining to farm bill legislation; report. July 5, 1985. Washington, G.A.O., 1985. 185 p.
"GAO/RCED-85-87"
"This report summarizes and updates GAO reports issued since 1981 on topics that are addressed by the Agriculture and Food Act of 1981 (the Farm Bill) and related subjects . . . . Report summaries and updates are presented according to the titles of the Farm Bill, and the final section discusses ongoing jobs dealing with Farm Bill issues."

U.S. President (1981- : Reagan) Economic report of the President; transmitted to the Congress February 1986, together with the annual report of the Council of Economic Advisers. Washington, G.P.O., 1986. 378 p. (Document, House, 99th Congress, 2nd session, no. 99-142)
"A keystone of this Administation's farm policy is that farm programs can distort economic incentives enough to cause some of agriculture's problems. The President recommended in early 1985 that American agriculture be returned gradually to a free-market footing. The Food Security Act of 1985, which the President signed into law in mid-December 1985, implemented some of his suggested reforms. But it maintained the traditional structure of American farm programs. Thus, U.s. agriculture has turned toward the free market, but it still remains heavily dependent upon Federal government programs. This chapter is devoted to an analysis of the economic implications. of those programs that directly and indirectly support farm income."

Urban, Thomas N. A new social contract with rural American. Agribusiness, v. 1, summer 1985: 129-136.

"Resources utlized to alleviate the nation's shift from agriculture to industry are no longer useful because rural and international economic environments have changed dramatically. In rural America, there is no longer a "farm problem" but rural communities with specific problems. In an era of technological change, it is time to create an innovative social and economic contract to implement new food and farm policies with well funded local and state development and credit programs augmented by federal appropriations leading to free marketing pricing of agricultural products."

Vance, Mary. Agricultural price supports: monographs. Monticello, Ill., Vance Bibliographies, 1984. 14 p. (Public administration series: bibliography P-1516)

The references in this bibliography are chiefly arranged by country; the longest section deals with the U.S.

VanChantfort, Eric. Agriculture and the larger economy: when links become liabilities. Farmline, v. 5, July 1984: 14-17.

"Farming has always been tied to the larger economy, but the relationship has grown more intimate and complex. The two are now so closely linked that developments beyond the farm gate may have a greater impact on agriculture--for better or worse--than traditional farm programs. The price of this vulnerability can be seen on both the income and the expense side of farming."

Wehr, Elizabeth. Administration's farm bill aims to reverse course set in 1930s. Congressional Quarterly weekly report, v. 43, Mar. 2, 1985: 396-398.

Discusses the Reagan Administration's farm bill, the Agricultural Adjustment Act of 1985, which is meant to "put U.S. agriculture on a market-oriented track by providing minimal aid to farmers and thereby, indirectly forcing lower market prices for their goods." Describes major provisions of the bill. Includes a related article on emergency farm credit bills.

Wilson, Gene, Gene Sullivan, and Charles Lokey Jr. Farm programs: how important to the Southeast? Federal Reserve Bank of Atlanta economic review, v. 70, Aug. 1985: 29-48.

"Many farmers in the Southeast seem less vulnerable to potential congressional cutbacks in federal programs because benefits in the region total less than 8 percent of all farm income. But small groups of southeastern farmers could be seriously affected."

Worthy, Ford S. Getting Uncle Sam off the farm. Fortune, v. 111, Mar. 18, 1985: 128-132.

"The patchwork of programs designed to aid farmers obviously doesn't work. The government could save more than $38 billion over the next five years by gradually doing away with agricultural price supports."

Zwerdling, Daniel. Down on the farm: the seeds of bad policy yield a crop of failure. Progressive, v. 47, Sept. 1983: 18-23.

"Farmers must use the least expensive, least energy-intensive methods of growing crops. And they must produce only as many bushels per acre as the soil can support while still sustaining or even increasing its productivity."

B. Credit Issues

Barry, Peter J. The Farmers Home Administration: current issues and policy directions. Looking ahead, v. 8, Sept. 1985: 4-12.

"Prevailing sentiments point toward efforts to reduce the size of FmHA programs, sharpen its focus, refine its operating policies, shift more activities toward the private financial sector or other public programs, and in general reduce reliance on credit to resolve financial problems in agriculture."

----- Impacts of financial stress and regulatory forces on financial markets for agriculture. Washington, National Planning Association, 1984. 34 p. (FAC report no. 1; NPA report no. 204)

Discusses farm credit, banking, the Farm Credit System, and public credit programs. "For farmers, the consequences of financial deregulation and eventual diminution of public credit programs mean that the costs of borrowing will likely remain higher than in pre-1980 times and will follow market interest rates more closely . . . . The pricing and structural directions in farm credit markets also suggest that farm borrowers will increasingly be treated like other commercial borrowers."

Benjamin, Gary L. The financial stress in agriculture. Federal Reserve Bank of Chicago economic perspectives, v. 9, Nov.-Dec. 1985: 3-16.

Discusses the causes, extent and nature of the current financial stress in the farm sector. Includes a discussion of the Farm Credit System--Looking for the "proper balance", by G. D. Irwin.

Boehlje, Michael. Agricultural policy and financial stress. Washington, American Enterprise Institute for Public Policy Research, 1984. 45 p. (AEI occasional papers; Studies in economic policy)

Evaluates the role of past price and income support and credit policies in mitigating or contributing to farm financial stress. Identifies alternative policy options to relieve the stress and evaluates them quantitatively using simulation models, and draws conclusions.

Brake, John R. Financing agriculture in the future. East Lansing Michigan State University, Cooperative Extension Service, 1983. 8 p. (Farm and food system in transition, FS10)

Briefly reviews the financial structure of agriculture and discusses the following policy concerns for future farm financing: effects of government programs on farm asset values; credit availability; government credit programs; taxes; interest rates; farm business cycles; and increasing capital needs.

A Brief history of Farmers Home Administration. Washington, U.S. Farmers Home Administration, 1985. 52 p.

Presents a history of Farmers Home Administration from 1935-1985, discussing key legislation and activities of each program area. Provides statistics on FmHA performance and activities for 1984 and earlier.

Bryan, Michael, and Gary Whalen. The financial distress in American farming. Federal Reserve Bank of Cleveland economic commentary, June 1, 1985: 1-4.

Presents farm financial analysis and concludes "it is becoming increasingly clear that the structure of American farming is undergoing a wrenching adjustment to a new environment. As a consequence, the family farm and the small agricultural bank may be in jeopardy . . . . However, because the number of farms and banks bearing the burden of the transition are relatively small when viewed from an industry perspective, the overall impact these adjustments will have on the national economy and on the financial system will probably be minor."

Clark, Timothy B. Borrowing trouble. National journal, v. 17, Sept. 7, 1985: 1977-1980.

"About $100 billion in troubled farm loans is dragging down rural banks and threatens the nation's farm finance system and fortunes of money-center banks."

The Current financial condition of farmers and farm lenders. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1985. 34 p. (Agriculture information bulletin no. 490)

Describes how the financial condition of many farmers and farm lenders has deteriorated over the last 4 years. "At current levels of interest rates and farm returns, farmers with debt amounting to over 40 percent of their total assets generally face cash flow problems and financial stress. Among the 679,000 family-size commercial farms on January 1, 1985, 229,000 farms, owing over 46 percent of all farm debt, had financial problems ranging from difficulty servicing debts to technical insolvency."

Excerpted in this volume.

Drabenstott, Mark, and Marvin Duncan. Farm credit problems: the policy choices. Federal Reserve Bank of Kansas City economic review, v. 70, Mar. 1985: 3-16.

"This paper outlines the origins and dimensions of the farm sector's financial stress. The likely duration of financial stress is then discussed and a number of public sector initiatives to ease the stress are identified and evaluated."

Economy-wide impacts of the farm financial crisis; summary report. Columbia, Mo., Food and Agriculture Policy Research Institute, 1985. 24 p.

"FAPRI staff report no. 9-85 (Revised), July 1985"

"The financial condition of U.S. agriculture is in a state of crisis; and the deterioration will not abate under most of the 1985 Farm Bill options being considered by Congress. Moreover, the financial crisis in agriculture, if not altered by corrective actions alleviating the debt load of highly leveraged farmers, will reach a magnitude sufficient to affect U.S. financial markets and the performance of the national economy."

Farm credit policy: State legislative approaches. Denver, National Conference of State Legislatures, 1985. 3 p. (State legislative report, v. 10, no. 3)

"With massive budget deficits facing the federal government, timely relief may depend upon state legislative initiatives."

The Farm Credit System controversy: pro & con. Congressional digest, v. 65, Jan. 1986: whole issue (3-32 p.)

Includes articles explaining federal credit assistance, federal credit programs, the Farm Credit System, recent action in Congress, and the main provisions of the Senate Farm Credit Restructuring and Regulatory Act. In response to the question "Is the Senate-approved bill to aid the Farm Credit System sound?" There are "pro" statements by J. Helms, E. Zorinsky, P. Hawkins, W. Ford, and S. Gorton; there are "con" statements by M. Baucus, P. Leahy, L. Bentsen, T. Harkin, and J. Bingaman.

Farm family financial stress. In American Council on Consumer Interests, 31st annual conference, March 27-30, 1985. Karen P. Schnittground, editor. Fort Worth, Tex, 1985. (The proceedings) p. 275-287.

The papers from a symposium: "The current family farm crisis," by R. Weagley; "Impact on consumers," by J. Kinsey; "State policy issues," by C. Fletcher; "Project support," by D. Goss; "Managing for tomorrow," by K. Prochaska-Cue.

Food for thought: a report on the problems of New York State's beginning farmers. Albany, New York State Senate, Task Force on Critical Problems, 1983. 136 p.

"This study is the result of an analysis on the effect that the changing credit market and other economic trends have had on those entering farming in New York." Farming serves as the primary economic base of most rural communities in the State.

Gates, David. Farm aid: from Merle Haggard to X, they played to save the farm. Rolling stone, no. 460, Nov. 7, 1985: 24-26, 28, 67, 69.

Illustrated article about farm aid puts the 15 hour concert into a political context. The organizers know "that even the $50 million they'd hoped to raise wouldn't pay a single day's interest on the U.S. farm debt. The proceeds will fund stopgap measures--psychological counseling, legal aid."

Huls, Mary Ellen. Agri-finance: banks, farmers, and agricultural policy. Monticello, Ill., Vance Bibliographies, 1985. 8 p. (Public administration series: bibliography P-1690)

Jolly, R. W., and D.G. Doye. Farm income and the financial condition of United States agriculture. Columbia, Mo., Food and Agriculture Policy Research Institute, 1985. 42 p.

"FAPRI staff report no. 8-85"

Comments that the widespread farm debt problem is primarily one of an unavoidable transition between two states of the economy. Suggests that financial policies might buy time to ease debt and asset restructuring and/or encourage investor activity in agriculture.

Kahn, Toby, Joyce Leviton, and Civia Tamarkin. What farm aid is about. People weekly, v. 23, Sept. 30, 1985: 26-31.

"Although they supply the world's best-fed nation, America's debt-plagued farmers face ruin and despair." Tells the stories of five farm families in crisis.

Medero, Frederick R. Access to capital: one of the most important current threats to American agriculture. Agricultural law journal, v. 4, winter 1983: 491-503.

Article examines the status of the Farm Credit System and its access to the nation's money markets.

Melichar, Emanuel. The incidence of financial stress in agriculture. Washington, American Enterprise Institute for Public Policy Research, 1984. 19 p. (Studies in economic policy; AEI occasional papers)

Analyzes and presents data on the impact of debt on profitability of a farm, farm cash flow, rate of income return to equity, distribution of farm size, off-farm income, farm debt, assets, and equity.

National farm survey on financial stress. Conducted by Farm Journal Magazine and Food and Agricultural Policy Research Institute. Columbia, Mo., Food and Agricultural Policy Research Institute, 1985. 57 p.

"FAPRI staff report no. 6-85, July 1985"

Presents the results of a survey of 8,000 randomly selected farm owner-operators from across the U.S. Data is evaluated for four major regions of the U.S., and for category of farm operation, including crops, dairy, poultry, beef, and pork.

Nichols, William Patrick. A farm finance proposal. Challenge, v. 28, July-Aug. 1985: 54-58.

Calls for a farm credit relief program which would distribute its cost burden among farmer, banker, and the government; it would be funded by a reduction in expenditures on commodity-support programs. Presents details of how the program would operate.

Obert, John C., and William A. Galston. Down ... down ... down ... on the farm. Washington, Roosevelt Center for American Policy Studies, 1985. 30 p.

Draws on the proceedings of a Nov. 1984 Farm Financial Roundtable of experts and on other sources "in order to identify the nature of the crisis; examine its causes; establish its dimensions; consider its effects on farmers, lenders, rural Americans, and taxpayers; compare arguments for and against expanded federal assistance; and analyze the various aid proposals, both those that have already been adopted and those that may be urged in coming months."

Pollock, Michael A. How the farm credit crisis is crushing America's breadbasket. Business week, no. 2881, Feb. 18, 1985: 124-126.
Describes farmers' credit squeeze, which is particularly bad in the Midwest. Charts the flows of credit among many lenders (commercial, Federal, government-backed, and co-ops) and asserts that "the crisis could be hitting many more Americans soon."

Schink, George R., and John M. Urbanchuk. Economy-wide impacts of agricultural sector loan losses. Philadelphia, Wharton Econometric Forecasting Associates, 1985. 38, 14 p.
Evaluates four agricultural sector loan loss scenarios over the 1985-93 period, focusing on two mid-range scenarios with loan losses of $20-25 billion. "The main direct macroeconomic effect of the agricultural sector loan losses would be an increase in short-term private interest rates due to the public perception of substantially higher risks being associated with financial asset holdings." Farm loan losses would probably result in higher short-term interest rates and higher interest rate premiums in the agricultural credit market.

Shepard, Lawrence. The farm debt crisis: temporary or chronic? Contemporary policy issues, v. 4, Jan. 1986: 62-71.
Argues that "(1) rising productivity of farm assests led to large increases in asset values during the 1950s, 1960s, and 1970s; (2) rising asset values significantly altered the incentive structure of agriculture; and (3) the resulting capital-gains based agriculture of the postwar motivated farmers to alter their capital structure in ways that made the current financial debacle inevitable once the income growth from assets tapered. From this basis, the paper concludes that farmers' borrowing behavior was substantially more responsible for the existing crisis than often-cited adversities in the markets for agricultural commodities. Accordingly a farm incomes policy cannot remedy the situation, and the current consolidation in agricultural debt-though painful-represents an unavoidable adjustment for American agriculture."

Schwab, Jim. Farm Credit bailout: saving the system, not the farmers. Nation, v. 242, Jan. 18, 1986: 44-46.
"The Farm Credit System bailout bill that Reagan signed [Dec 23] will do little to still the growing insurgency against the system's lending and foreclosure policies, and its plans to centralize its local associations. Many farmers feel the system has been more interested in saving itself than in helping them, and the bailout does nothing to dispel this impression."

Stang, Alan. Big government and the Federal Reserve defraud farmers. American opinion, v. 28, May 1985: 1-4, 99, 102, 104, 106, 108, 110.
Charges that the Federal Reserve System ruins farmers by using an "easy money" policy to encourage debt and then cuts off the credit.

----- Some conservative suggestions on how to solve the farm problem. American opinion, v. 28, June 1985: 21-26, 93, 95-98.
"More and more American farmers are becoming aware that their problem was created in Washington, and that the solution lies in returning to a sound economic footing and kicking government out of agriculture. Our farmers should be allowed to operate in the free market, unhampered by regulation." Presents proposals by various people and groups which would re-orient agriculture to a free market approach.

Taylor, Marcia Zarley, and Nita Effertz. Pressure is on problem PCAs. Farm journal, v. 109, Feb. 1985: 16-19.
Describes how Production Credit Associations are reeling from the impact of steep losses and the exit of good customers. Cites statistics on PCA loan and member volume, bankruptcies and mergers. Observes that "investors won't lose a nickel on the Farm Credit System, but farmers aren't as lucky."

Thompson, Jerry. Farm financial distress: nature, scope, and measurement of the problem. Agricultural law journal, v. 4, winter 1983: 450-474.

With tables and graphs, this article explains that while U.S. agriculture is financially strong in the aggregate, meeting current repayment schedules is a problem for highly leveraged operations. These operations are stressed by high interest rates and depressed farm prices.

Tweeten, Luther. Farm financial stress, structure of agriculture and public policy. S.l. 1985. 39 p.
"Paper presented at American Enterprise Institute conference on U.S. Agricultural Policies held in Washington D.C. January 28 and 29, 1985."
"The conclusion of this paper is that the paradox of consumer prosperity and producer distress is the predictable product of Reaganomics, an economic policy followed against the best advice of the nation's most respected economists."

U.S. Congress. House. Committee on Agriculture. Economic conditions in agriculture and fiscal year 1984 Department of Agriculture budget proposals (Secretary John R. Block). Hearing, 98th Congress, 1st session. Feb. 9, 1983. Washington, G.P.O., 1983. 120 p.
"Serial no. 98-1"

----- Farm Credit Act amendments of 1985; report to accompany H.R. 3792. Washington, G.P.O., 1985. 124 p. (Report, House, 99th Congress, 1st session, no. 99-425)

----- Farm Emergency Credit Act of 1985; report together with supplemental views to accompany H.R. 1035. Washington, G.P.O. 1985. 44 p. (Report, House, 99th Congress, 1st session, no. 99-6, part 1)

U.S. Congress. House. Committee on Agriculture. Subcommittee on Conservation, Credit, and Rural Development. Farm credit crisis. Hearing, 99th Congress, 1st session. Feb. 7, 1985. Washington, G.P.O., 1985. 333 p.
"Serial no. 99-1"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Wheat, Soybeans, and Feed Grains. Guaranteed loans by private lenders. Hearing, 97th Congress, 1st session, on H.R. 4179. Sept. 17, 1981. Washington, G.P.O., 1982. 64 p.
"Serial no. 97-LL"

U.S. Congress. House. Committee on Banking, Finance and Urban Affairs. Subcommittee on Financial Institutions Supervision, Regulation and Insurance. Farm debt. Hearings, 99th Congress, 1st session. Mar. 20-21, 1985. Washington, G.P.O., 1985. 232 p.
"Serial no. 99-14"

U.S. Congress. House. Committee on Government Operations. Subcommittee on Government Information, Justice, and Agriculture. Does farm financing face fundamental change or current credit crisis (Part 1). July 15, Sept. 27, and Nov. 15, 1985. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1986. 431 p.

U.S. Congress. House. Committee on Government Operations. Manpower and Housing Subcommittee. Farmers Home Administration loan program targeting. Hearing, 98th Congress, 2nd session. Apr. 23, 1984. Washington, G.P.O., 1984. 85 p.
Hearing held in Augusta, Me.

U.S. Congress. House. Committee on the Judiciary. Family Farmer Bankruptcy Act of 1985; report to accompany H.R. 2211 including cost estimate of the Congressional Budget Office. Washington, G.P.O. 1985. 19 p. (Report, House, 99th Congress, 1st session, no. 99-178)

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Task force on agricultural credit; report together with additional views to accompany S. Res. 287. Washington, G.P.O., 1984. 10 p. (Report, Senate, 98th Congress, 2nd session, no. 98-396)

U.S. Congress. Senate. Committee on Banking, Housing and Urban Affairs. The Farm Credit Relief Act of 1985. Hearing, 99th Congress, 1st session on S. 1151. July 24, 1985. Washington, G.P.O., 1985. 139 p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-308)

U.S. Congress. Senate. Committee on Banking, Housing and Urban Affairs. Subcommittee on Financial Institutions and Consumer Affairs. Agricultural lenders. Hearing, 99th Congress, 1st session on S. 795. Apr. 26, 1985. Washington, G.P.O., 1985. 201 p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-94)

U.S. Congress. Senate. Committee on Small Business. Subcommittee on Small Business: Family Farm. Farm credit problems and their impact on agricultural banks. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1985. 218 p. (Hearings, Senate, 99th Congress, 1st session, S. Hrg. 99-14)

Hearings held Feb. 7 and 27, 1985.

U.S. Congress. Senate. Committee on the Judiciary. Subcommittee on Courts. Farm and home foreclosures. Hearing, 98th Congress, 1st session. Mar. 14, 1983. Washington, G.P.O., 1983. 138 p. (Hearings, Senate, 98th Congress, 1st session, S. Hrg. 98-157)

"Serial no. J-98-18"

U.S. Dept. of Agriculture. Economic Research Service. Economic indicators of the farm sector: national financial summary, 1984. Washington, The Service [for sale by the Supt. of Docs., G.P.O., 1986] 85 p.

"ECIF 4-3"

"This report details farm earnings, farm assets, and liabilities in 1984. It treats the farm sector as one business enterprise so that meaningful financial comparisons can be made from one year to the next, and the relative health of U.S. agriculture itself can be assessed apart from nonagricultural and family considerations."

----- Federal credit programs for agriculture: background for 1985 farm legislation. Washington, The Dept., 1984. 35 p. (Agriculture information bulletin no. 483)

"Federal credit assistance programs were developed in the early 1900's to overcome deficiencies in agricultural capital markets and respond to the problems of poverty, tenancy, and disenfranchisement. Federal credit policies, implemented primarily by the Farmers Home Administration and the Farm Credit System, have had a significant impact on the transformation which has taken place in agriculture and on farmers' access to capital. Agriculture continues to be a major recipient of Federal credit assistance. The agencies and institutions providing such assistance now hold about 40 percent of all farm debt."

U.S. General Accounting Office. Farm Credit System: GAO's analysis of the system's third quarter financial condition; briefing report to various members of Congress. Dec. 1985. Washington, G.A.O., 1985. 43 p.

"GAO/GGD-86-35BR"

Updates the data contained in "Preliminary Analysis of the Financial Condition of the Farm Credit System" (GAO/GGD-86-13BR).

"The material contained in this briefing report indicates a significant deterioration in the financial condition of the System."

----- Farmers Home Administration: an overview of farmer program debt, delinquencies, and loan losses; briefing report to the chairman, Committee on Agriculture, Nutrition, and Forestry, U.S. Senate. Jan. 1986. Washington, G.A.O., 1986. 137 p.

"GAO/RCED-86-57BR"

"Provides information on the financial condition of the Farmers Home Administration's (FmHA) loan portfolio for its five major farmer loan programs: farm ownership, operating, emergency disaster, economic emergency, and soil and water. Specifically, this report provides both national and state information on (1) total farm debt and FmHA's portion of that total, (2) total number of loans and borrowers and loan amounts for each of FmHA's major farmer programs, and (3) delinquencies and loan losses occurring in these programs."

----- Farmers Home Administration: financial and general characteristics of farmer loan program borrowers; briefing report to the chairman, Committee on Agriculture, Nutrition, and Forestry, U.S. Senate. Jan. 1986. Washington, G.A.O., 1986. 50 p.

"GAO/RCED-86-62BR"

"This briefing report presents information on a total of 65,893 FmHA borrowers who received 117,366 farm loans during 1983 and 1984 (about 53 percent of all farm loans made during that period). The first section of the report provides information on borrower assets and liabilities, debt-to-asset ratios, and equity positions. The second section discusses the cash flow position of the borrowers; the third section provides general characteristics of borrowers including farm type, size, and demographic data." GAO observations and methodology are also included.

----- Financial condition of American agriculture; report to the Congress by the Comptroller General of the United States. Oct. 10, 1985. Washington, G.A.O., 1985. 105 p.

"GAO/RCED-86-09"

"This report contains our analysis of the nature and causes of agriculture's problems. We provide information on trends in the economic environment surrounding the farm sector, the farmers' financial conditions, and the performance of financial institutions serving agriculture. . . . Our analysis to date indicates that the financial condition of farmers and their lenders has deteriorated rapidly since 1980 and that financial stress continues to grow."

----- Report on the implementation of the Farm Credit Act amendments of 1980; report to the Congress by the Comptroller General of the United States. Apr. 8, 1985. Washington, G.A.O., 1985. 67 p.

"GAO/GGD-85-32"

"Discusses the extent that the new and expanded lending authorities in the 1980 Amendments have been used by the agricultural community and whether these amendments have resulted in the benefits anticipated when the legislation was enacted."

C. Tax, Fiscal, and Monetary Issues

Baker, C. B. Agricultural effects of changes in financial markets. American journal of agricultural economics, v. 66, Dec. 1984: 541-548.

Surveys developments in international and domestic financial markets and concludes that "agriculture is affected more by fiscal-monetary management and the state of international markets in commodities and financial assets than by politically achievable targets in commodity prices and loan supports. Benefits to agriculture from sector-oriented price and income policy must be weighed against any negative general consequences as they are transmitted back to agriculture through financial and commodity markets."

Boehlje, Michael. Taxes and future food and fiber system structure and performance. East Lansing, Michigan State University, Cooperative Extension Service, 1984. 7 p. (Farm and food system in transition, FS25)

Excerpted in this volume.

Bredahl, Maury E., and William H. Meyers. Exchange rates & agricultural trade. East Lansing, Cooperative Extension Service, Michigan State University, 1985. 6 p. (Farm and food system in transition, FS38)

Discusses the strength of the dollar, exchange rates among other nations, the price of imports relative to the price of domestic products, price intervention policies, and exchange rates as policy instruments. All these factors affect U.S. agricultural trade.

Chase Econometric Associates. Rural impacts of monetary policy. Agricultural economics research, v. 33, Oct. 1981: 1-11.

"Urban areas tend to respond more elastically than rural ones. Consequently, during extended periods of tight monetary policy, most induced contraction in income and employment will be in urban places." This study by Chase Econometric Associates and the USDA's Economic Research Service suggests that "it is in the national interest to have rural development programs which depend on other inducements to growth besides credit availability."

Duncan, Marvin, Mark Drabenstott, and Kim Morris. Farm prosperity: policies for the future. Federal Reserve Bank of Kansas City economic review, v. 70, Sept.-Oct. 1985: 25-38.

"The most straightforward initiative would be to redirect the nation's fiscal policy to bring federal budget deficits under control. A reduction in the federal deficit would be enormously helpful to agriculture."

Dunford, Richard W. The effects of Federal income tax policy on U.S. agriculture; a study prepared for the use of the Subcommittee on Agriculture and Transportation of the Joint Economic Committee, Congress of the United States. Washington, G.P.O., 1985. 35 p. (Print, Senate, 98th Congress, 2nd session, joint committee print S. Prt. 98-273)

Hughes, Dean W., and Marvin Duncan. Monetary and fiscal policy connections to agriculture. East Lansing, Michigan State University, Cooperative Extension Service, 1984. 8 p. (Farm and food system in transition, FS7)

Describes the links between the agricultural sector and other sectors of the of the economy; explains the basics of monetary and fiscal policy; discusses some macroeconomic policy prescriptions currently being debated.

Simon, Ruth. The small farmer: an endangered species. People & taxes, v. 9, Dec. 1981: 6-7; v. 10, Jan. 1982: 4-5.

A two-part series on the effects of tax policy on American agriculture emphasizes the serious problem faced by the small, family farmer.

U.S. Congress. House. Committee on Banking, Finance and Urban Affairs. Subcommittee on Consumer Affairs and Coinage. Oversight hearings on the extension of Federal override of state usury laws and effects of high interest rates on business and farmers. Hearings, 98th Congress, 1st session. Mar. 9 and 10, 1983. Washington, G.P.O., 1983. 223 p.

"Serial no. 98-7"

U.S. Congress. House. Committee on Banking, Finance and Urban Affairs. Subcommittee on Domestic Monetary Policy. Report on the conduct of monetary policy: together with comments on the July 1985; report of the Federal Reserve an additional view. Washington, G.P.O., 1985. 116 p.

At head of title: Committee print 99-6.

D. Structure of Agriculture and of Agricultural Communities

Catholic Church. National Conference of Catholic Bishops. Food and agriculture: chapter five of the U.S. Catholic Bishops' Pastoral Letter on Catholic Social Teaching and the U.S. Economy. Washington, The Conference, 1985. 15 p.

"This is the fifth chapter of the first draft of the U.S. Catholic Bishops' Pastoral on Catholic Social Teaching and the U.S. Economy. The draft was released on November 14, 1984 without the fifth chapter, which was not complete at that time." It advocates a redirection of government policies so that benefits can be channeled to moderate-sized family farms.

The Diverse social and economic structure of nonmetropolitan America. Washington, U.S. Department of Agriculture, Economic Research Service, 1985. 25 p. (Rural development research report no. 49)

"This study identifies seven distinct types of rural counties according to their major economic base, presence of federally owned land, or population characteristics: (1) counties depending heavily on farming, (2) counties depending heavily on manufacturing, (3) mining counties with economies based principally on natural resources, (4) counties specializing in government functions, (5) persistent poverty counties, (6) Federal lands counties, and (7) retirement settlements. Because of these unique characteristics, government policies and economic trends may affect these county groups in quite different ways."

Chapman, Stephen. The farmer on the dole. Harper's magazine, v. 265, Oct. 1982: 18-21.

Argues that agricultural policies directed toward preserving the family farm are expensive and unnecessary. Contends that the family farmer is a "sophisticated, relatively prosperous businessman." Discusses the tax treatment of farms and agricultural price supports.

Dorow, Norbert A. The farm structure of the future: trends and issues. East Lansing, Michigan State University, Cooperative Extension Service, 1984. 8 p. (Farm and food system in transition, FS17)

Reprinted in this volume.

Edwards, Clark, Matthew G. Smith, and Neal R. Peterson. The changing distribution of farms by size: a Markov analysis. Agricultural economics research, v. 37, fall 1985: 1-16.

"Farm numbers and average farm size in the United States have held about constant since the 1974 Census, but the proportion of mid-sized farms has decreased. This pattern follows four decades of a strong trend toward fewer and larger farms."

Edwards, Clark. Productivity and structure in U.S. agriculture. Agricultural economics research, v. 37, summer 1985: 1-11.

An examination of national summary tables for the 1982 Census of Agriculture leads to the conclusion that as larger farms consistently tend to have higher yields the productivity of the farm sector is partly a function of structure.

The erosion of rural America. Engage/social action, v. 13, June 1985: whole issue (48 p.)

Contents.--The current financial crisis in rural United States, by B. Bedell.--People and their needs in rural United States, by G. Campbell.--The plight of Black farmers driven from their land, by C. Jones.--Land and conservation, by N. Bushwick.--Can we afford to let the cockeyed system of farm and tax policies continue? by L. Picciano-Hanson.--The churches' response to the rural crisis, by F. Dorsey.

Glenn, Kenneth A. The decline of Black farming in America: a call to alert. Black law journal, v. 8, fall 1983: 292-305.

In view of the estimate that Black farm ownership is decreasing at approximately 6000 acres per week, comment calls on "prospective and practicing black attorneys to further investigate, litigate, and become more cognizant of real property ownership patterns among black people in respective areas."

Hayes, Michael N., and Alan L. Olmstead. Farm size and community quality: Arvin and Dinuba revisited. American journal of agricultural economics, v. 66, Nov. 1984: 430-436.

Discusses Walter Goldschmidt's work, "Small Business and the Community", which described the deleterious effects of large farms on community development. Finds the two study sites, Arvin and Dinuba, too dissimilar for the type of comparative analysis Goldschmidt used; argues that his evidence did not support his conclusions.

Khan, Anwar S., and Nozar Hashemzadeh. Small farmers going under; a report from North Carolina. Journal of the Institute for Socioeconomic Studies, v. 8, autumn 1983: 15-25.

Data from a survey of North Carolina small farmers reveal the following major causes of economic distress: cash flow problems, falling farm income, the high cost of borrowing and the lending practices of private and public institutions, rising production costs including the price of farm land, farm price supports, and the tax structure.

Krohe, James, Jr. Family-farm hogwash. Across the Board, v. 22, May 1985: 3-6 p.

Author argues that farm policy is confused because it plays on emotions, not reality. "Farmers have learned to cultivate deep anxieties and yearnings among Americans, which they and their Congressional lobbyists annually harvest in the form of billions of dollars worth of farm-support programs . . . . In the same way that Pentagon spending is supposed to buy security but ends up buying only arms, so spending on farm programs is intended to buy a way of life, but buys only grain."

MacFadyen, J. Tevere. Survival of the family farm: a hard row to hoe. Environmental action, v. 16, Oct. 1984: 7-10.

"America's farmland resources are everywhere under attack, and badly need to be preserved, but what may be far worse in the long run is the rapid disappearance of America's farmers."

Petrulis, Mindy. Effect of U.S. farm policy on rural America. Rural development perspectives, v. 1, June 1985: 31-34.

Reprinted in this volume.

Powers, Ronald C., and Daryl J. Hobbs. Changing relationships between farm and community. East Lansing, Cooperative Extension Service, Michigan State University, 1985. 6 p. (Farm and food system in transition, FS46)

"Today the question of whether the current farming structure will be continued frequently depends upon the rest of the economic base in the community. Industries, government agencies, and Social Security benefits have added to the economic base of many rural communities which formerly depended on agriculture alone to support local community services. . . . One of the most basic questions which may be posed is the logic of continuing to develop 'farm policy' apart from 'rural development policy.' In this paper we will trace the changes in the relationship between agriculture and identify some of the salient issues which have resulted from these changes."

Reimund, Donn A., J. Rod Martin, and Charles V. Moore. Structural change in agriculture: the experience for broilers, fed cattle, and processing vegetables. Washington, U.S. Dept. of Agriculture, Economics and Statistics Service, 1981. 73 p. (U.S. Dept. of Agriculture. Technical bulletin no. 1648)

"In the subsectors studied, new technology, market conditions, and policies set off a four-stage process: technological adaptation, shift to new producing areas, growth and development, and adjustment to risk.

Brief comparisons with changes in four other farming subsectors confirm the validity of this preliminary model of the agricultural change process."

Sinclair, Ward. Black farmers: a dying minority. Washington post, Feb. 18, A1, A4.

Reports that "the black farmer is fast becoming a statistical nonentity in America," despite the U.S. Commission on Civil Rights' 1982 study and subsequent comments by USDA's Samuel J. Cornelius on this issue.

Small farms, family and part-time farming in the United States, 1982-1984. Beltsville, Md., U.S. National Agricultural Library, 1984. 17 p. (Quick bibliography series)
"NAL-BIBL. 84-48"

Social, structural, and technological changes in agriculture. Beltsville, Md., U.S. National Agricultural Library, 1984. 30 p. (Quick bibliography series)
"NAL-BIBL. 84-39"
Lists 222 citations from the AGRICOLA database. Some citations have abstracts or extracts.

Tweeten, Luther. Causes and consequences of structural change in the farming industry. Washington, National Planning Association, 1984. 71 p. (FAC report no. 2; NPA report no. 207)
Analyzes the emergence of a dual farming industry: a commercial sector with a few larger-than-family farms providing most of the output, and another sector with large numbers of small part-time farms accounting for most farms but relatively little output.

----- The economics of small farms. Science, v. 219, Mar. 4, 1983: 1037-1041.
"There may be reasons to preserve and even encourage small farms but they are not the reasons commonly given for political initiatives and public policies favoring small farms. Although it is questionable whether any size of farm can be viewed as optimal, the strongest case is for the typical moderate-size family farm of today rather than for small farms or large industrial-type farms."

U.S. Commission on Civil Rights. The decline of Black farming in America. [Washington] 1982. 196 p.
Reports on problems confronting Black farmers including farm credit, racial discrimination, and lack of institutional economic support; and recommends improvements in civil rights and equal opportunity enforcement mechanisms within FmHA programs.

U.S. Congress. House. Committee on Agriculture. Agricultural communities: the interrelationship of agriculture, business, industry, and government in the rural economy; a symposium; prepared by the Congressional Research Service, Library of Congress for the Committee on Agriculture, U.S. House of Representatives. Washington, G.P.O., 1983. 354 p.
At head of title: 98th Congress, 1st session. Committee print.
Presents an overview, written by Sandra Osbourne, and fifteen of the Symposium papers.

U.S. Congress. House. Committee on Agriculture. Subcommittee on Conservation, Credit, and Rural Development. Rural enterprise zone development. Hearing, 97th Congress, 1st session. Nov. 17, 1981. Washington, G.P.O., 1982. 186 p.
"Serial no. 97-JJ"

U.S. Congress. House. Committee on Agriculture. Subcommittee on Forests, Family Farms, and Energy. Structure of agriculture. Hearings, 97th Congress, 1st session. Washington, G.P.O., 1981. 334 p.
"Serial no. 97-A"
Hearings held Feb. 26-27, and Mar. 2, 1981.

U.S. Congress. House. Committee on Small Business. Subcommittee on Export Opportunities and Special Small Business Problems. Crisis in the rural economy and its effect on small businesses. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1986. 162 p.
Hearings held in Kansas City, MO, June 29 and Washington, DC, July 30, 1985.

U.S. Congress. Joint Economic Committee. Subcommittee on Agriculture and Transportation. The economic evolution of rural America. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1985. 391 p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-280, part 2)

Part 2--May 22, 1985--Rural community resources; June 13, 1985--The rural labor force; June 19, 1985--Rural finance; July 1, 1985--Rural education.

----- The economic evolution of rural America. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1985. 814 p.

Part 1--Feb. 11, 1985--The outlook for the South Dakota economy; May 8, 1985--Rural mainstreet: an American institution; May 15, 1985--Rural economic development.

U.S. Congress. Senate. Committee on Small Business. Subcommittee on Small Business: Family Farm. Critical issues facing family farm owners. Hearing, 98th Congress, 1st session. Apr. 27, 1983. Washington, G.P.O., 1983. 205 p. (Hearing, Senate, 98th Congress, 1st session, S. Hrg. 98-164)

----- The issue of corporate buyouts of family farms. Hearing, 98th Congress, 2nd session. Aug. 1, 1984. Washington, G.P.O., 1984. 210 p. (Hearing, Senate, 98th Congress, 2nd session, S. Hrg. 98-969)

U.S. Congress. Office of Technology Assessment. Technology, public policy, and the changing structure of American agriculture. Washington, Office of Technology Assessment, 1986. 374 p.

"OTA-F-285"

"This report addresses the longer run issues that technology and certain other factors will have on American agriculture during the remainder of this century. It focuses on the relationship of technology to: agricultural production, structural change, rural communities, environment and natural resources base, finance and credit, research and extension, and public policy. The assessment identifies many benefits that new technologies will create, but these benefits will also exact substantial costs in potential adjustment problems." A separate, 39-page summary (OTA-F-286) of this report is also available; a 91-page interim version (OTA-F-272) of this report was issued in 1985.

U.S. Dept. of Agriculture. A time to choose: summary report on the structure of agriculture. Washington, U.S. Dept. of Agriculture, [for sale by the Supt. of Docs., G.P.O.] 1981. 164 p.

Describes and analyzes the global and rural contexts of American agriculture, details specific areas of policy concern, and provides conclusions and recommendations.

U.S. Dept. of Agriculture. Economic Research Service. Status of the family farm; farm organization and performance in the 1970's. Prepared by the Economic Research Service, U.S. Dept. of Agriculture for the Committee on Agriculture, Nutrition, and Forestry, United States Senate. Washington, G.P.O., 1982. 48 p.

At head of title: 97th Congress, 1st session. Committee print.

West, Jerry G. Issues in small farm policy. Policy research notes, no. 17, June 1984: 17-22. [Available through the University of Illinois at Urbana-Campaign Agricultural Experiment Station, Urbana, Illinois, 61801]

Discusses types of small farms and how agricultural policies affect them against larger producers. Summarizes issues concerning small farms.

Vogeler, Ingolf. The myth of the family farm : agribusiness dominance of U.S. agriculture. Boulder, Colo., Westview Press, 1981. 352 p. (A Westview special study)

Asserts that Federal legislation and practices have had an institutional bias toward large scale farms and agribusinesses and have hastened the demise of family farms.

E. Natural Resources Issues

Agricultural land values and markets: outlook and situation report. Washington, U.S. Dept. of Agriculture, Economic Research Service, [for sale by the Supt. of Docs.] G.P.O., 1985. 26 p.
"CD-90"
"Farmland values declined 12 percent from April 1984 to April 1985, to their lowest level since 1979." This report presents a summary and outlook on farmland values, market developments, and information on California land values, impacts of declining values, cash rents, farm real estate transfers, and financing farmland transfers.

Agricultural productivity and the world food market. Environment, v. 27, Nov. 1985: 15-20, 32-37.
Concludes "From an agricultural perspective, the world has made significant progress over the last 35 years in making the world more habitable. The costs involved however [have been] significant enough in some cases to detract from the gains and to raise questions about future improvements."

Analysis of policies to conserve soil and reduce surplus crop production. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1985. 22 p. (Agricultural economic report no. 534)
Long-term retirement and conservation-oriented commodity programs have potential for increasing soil conservation while reducing surplus crop production. Current commodity programs tend to discourage conservation . . . . [Retirement of land eroding at the highest rates would save the most soil but cost the Government more than other retirement options. Retirement of surplus crop acres targeted to highly erodible land could be cost-effective for both conservation and commodity program objectives.] Cross-compliance would not promise widespread conservation benefits and might reduce commodity program effectiveness, but compliance incentives and modest changes in commodity programs could complement other soil protection measures.

Batie, Sandra S., and Robert G. Healy. The future of American agriculture. Scientific American, v. 248, Feb. 1983: 45-53.
"In the coming decades the price of farm products in the U.S. will be influenced not only by constraints on the supply of essential inputs such as land, water and energy but also by the demand for exports."

Batie, Sandra S. Soil conservation policy for the future. East Lansing, Michigan State University, Cooperative Extension Service, 1984. 7 p. (Farm and food system in transition, FS23)
Reprinted in this volume.

Boxley, Robert F. Farmland ownership and the distribution of land earnings. Agricultural economics research, v. 37, fall 1985: 40-44.
"Examines changes in U.S. farmland ownership and tenure over this century, it analyzes differences in the distribution of farm operators and farmland owners in 1979 and examines how land earnings may have been shared then."

Conservation tillage. Science, v. 230, Nov. 8, 1985: 625-630.
"There is a need to devise improved pest management strategies for conservation tillage and to better understand the impact of conservation tillage on water quality, especially as it is related to use of agricultural chemicals. While savings in fuel, labor, and soil have induced many farmers to adopt conservation tillage, improved methods and equipment should increase adoption even more."

Coughlin, Robert E., and others. The protection of farmland: a reference guidebook for state and local governments. Washington, [For sale by the Supt. of Docs., G.P.O.] 1981. 284 p.

The authors provide "a reference guide to programs which are being used to protect agricultural land--to identify their elements, document the experience which state and local governments have had with them, identify their intended and unintended effects, note their fiscal and political costs, and comment on their long- and short-run effectiveness."

Council for Agricultural Science and Technology. Water use in agriculture: now and for the future. Ames, Iowa 1982. 28 p. (Council for Agricultural Science and Technology. Report no. 95)

Presents an overview of the physical, institutional, economic, and sociological aspects of water use in agriculture, as well as a brief review of some of the current controversial issues.

Cropland use and supply: outlook and situation report. Washington, U.S. Dept. of Agriculture, Economic Research Service, for sale by the Supt. of Docs., G.P.O., 1985. 30 p.

Partial contents.--1985-86 outlook.--Cropland used for crops.--Other uses of cropland.--Intensity of cropland use.--Dynamics of cropland use.--References.--List of tables.--Special article: Trends in double cropping.

Crosson, Pierre. Agricultural land: will there be enough? Environment, v. 26, Sept. 1984: 16-20, 40-45.

Discusses economic aspects of soil erosion, focusing on the question of whether future generations will be able to produce adequate food at reasonable costs from present cropland. Reviews the agricultural land situation in the U.S. and in developing countries.

----- The cropland crisis: myth or reality? Edited by Pierre R. Crosson. Baltimore, Resources for the Future, 1982. 250 p.

The proceedings of a conference on "The Adequacy of Agricultural Land--Future Problems and Policy Alternatives" presents "a systematic treatment of the domestic and international demands for agricultural products, consideration of probable trends in agricultural land use, and development of the possibilities of technical change, as well as discussion of policy measures and issues."

----- Resource and environmental effects of U.S. agriculture, by Pierre R. Crosson and Sterling Brubaker. Washington, Resources for the Future, 1982. 255 p.

The authors estimate U.S. agricultural production for major crops to the year 2010 and assess the pressure on land, water, and the environment depending on the kind of technologies farmers employ.

Dover, Michael. Getting off the pesticide treadmill. Technology review, v. 88, Nov.-Dec. 1985: 53-63.

"We must set up a comprehensive federal program to promote more benign and effective pest controls." Recommends research in breeding pest resistant plants, and biological control by, for instance, beneficial insects.

----- Pesticide resistance and public policy, by Michael J. Dover and Brian A. Croft. BioScience, v. 36, Feb. 1986: 78-85.

"As pests continue to evolve resistance to existing chemicals, the development of replacement compounds is slowing." Resistance management seeks to prevent, delay, or reverse the evolution of resistance by a variety of chemical and ecological tactics.

Fletcher, Wendell. The American cropland crisis: why U.S. farmland is being lost and how citizens and governments are trying to save what is left. Bethesda, Md., American Land Forum, c1982. 193 p.

Partial contents.--Losing the land: the zoning crisis and the current response.--Beyond open space: farmland as a stategic resource.--Saving the land: the search for new approaches.

Hanson, David J. Human health effects of animal feed drugs unclear. Chemical & engineering news, v. 63, Oct. 7, 1985: 7-11.

"Some experts believe that the incidence of resistant Salmonella bacteria is increasing, and they put much of the blame on the low levels of antibiotics used in animal feeds to increase feed efficiency and to provide animals some protection from disease. Other experts say the low-level use of antibiotics has made beef, poultry, and pork more affordable and is absolutely no danger to human health."

Hayden, F. Gregory. A geobased national agricultural policy for rural community enhancement, environmental vitality, and income stabilization. Journal of economic issues, v. 18, Mar. 1984: 181-221.

Charges that America's agricultural policies have resulted in soil erosion, water pollution, the destruction of wildlife habitat and wetlands, and the decline of rural communities. Presents alternative ways to finance agriculture. Recommends national citizens' involvement in agricultural policy.

Heimlich, Ralph. Sodbusting: land use charge and farm programs. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1985. 28 p. (Agriculture information bulletin no. 536)

Farmers converted 11.1 million acres of land to cropland between 1979 and 1981, but only 1.0 million acres were both highly erodible and planted to program corps. Although concern about sodbusting focuses on the Great Plains, such conversion has been occurring in all regions. Analysis of costs and returns indicates that farm programs do provide an incentive to convert highly erodible land to cropland. Participation in price support and subsidized loan programs would have made net returns on 384,000 acres of highly erodible land profitable in 1982. Proposed legislation would remove such incentives, but the proposed system for identifying highly erodible land does not precisely identify new cropland with high potential for excessive erosion.

Hoag, Dana L., and Douglas L. Young. Toward effective land retirement legislation. Journal of soil and water conservation, v. 40, Sept.-Oct. 1985: 462-466.

The authors discuss the economics of both "sodbuster legislation to discourage the conversion of highly erodible land to cropland and conservation reserve legislation to stimulate retirement of highly erodible land from crop production" with special reference to the Palouse region of Washington State and Idaho.

Larson, W. E., F. J. Pierce, and R. H. Dowdy. The threat of soil erosion to long-term crop production. Science, v. 219, Feb. 4, 1983: 458-465.

"National increases in row crops at the expense of hay and pasture crops, particularly on steeper slopes, have made the control of erosion a difficult prospect. Management practices that fit the various field conditions are needed to accomplish effective erosion control . . . . The maintenance of a cropland base adequate to our needs must be a primary national goal."

LeVeen, E. Phillip, and Laura B. King. Turning off the tap on Federal water subsidies. San Francisco, Natural Resources Defense Council, California Rural Legal Assistance Foundation, 1985. 157, 75 p.

Volume I--The Central Valley Project: the $3.5 billion giveaway.

"The history of subsidized water in California agriculture, begun with great promise, has been marked by failed social policy, illegal capture of economic benefits, and poisoning of the environment . . . . The recommendations in this report will help achieve the necessary transition to a system of agriculture based on fiscal responsibility, sound economic development, and improved protection of the environment."

McClintock, David. The global importance of American cropland. EPA journal, v. 7, Apr. 1981: 26-28.

An excerpt from the National Agricultural Lands Study discusses the political importance of U.S. food exports.

McCullough, Rose, and Daniel Weiss. An environmental look at the 1985 farm bill. Journal of soil and water conservation, v. 40, May-June 1985: 267-270.

"The 1985 farm bill presents a historic opportunity to redirect farm programs and thereby reduce the environmental damages caused by farming. The goal of the conservation community, including the Sierra Club, American Farmland Trust, and other organizations, is to institute policies that reduce erosion and agricultural runoff now, prevent future erosion, and discourage wetlands conversion." Article describes problems and suggests solutions.

Natural resources and the environment: the Reagan approach. Edited by Paul R. Portney. Washington, Urban Institute Press, c1984. 144 p. (Changing domestic priorities series)

This volume "is concerned with the control of air and water pollution, toxic substances, pesticides, and hazardous wastes by the U.S. Environmental Protection Agency (EPA), and with the protection of endangered species, national parks, wildlife refuges and wilderness areas, and other publicly owned land managed by the U.S. Department of the Interior. Papers describing and analyzing the actions taken by the Reagan administration in the important, but somewhat less controversial, policy areas of energy and agriculture are also included."

A conference sponsored by the Changing Domestic Priorities Project of the Urban Institute.

Nowak, Peter J. The leadership crisis in conservation districts. Journal of soil and water conservation, v. 40, Sept.-Oct. 1985: 420, 422-425.

"The responsibility of district representatives is explicit. They are to provide leadership in planning, organizing, coordinating, and evaluating district conservation activities. Unfortunately, that clear leadership responsibility has become blurred in recent years . . . . Implementing state and federally mandated programs have forced districts to develop reactive rather than proactive strategies."

O'Brien, Patrick M. Agricultural productivity and the world food market. Environment, v. 27, Nov. 1985: 15-20, 32-37.

Concludes "From an agricultural perspective, the world has made significant progress over the last 35 years in making the world more habitable. The costs involved however [have been] significant enough in some cases to detract from the gains and to raise questions about future improvements."

Ogg, Clayton W., James D. Johnson, and Kenneth C. Clayton. A policy option for targeting soil conservation expenditures. Journal of soil and water conservation, v. 37, Mar.-Apr. 1982: 68-72.

The authors suggest a policy that would compensate farmers for shifting erosive cropland to less erosive uses. They discuss the effectiveness of targeting assistance to regions with severe erosion problems.

Pimentel, David. Pesticides: amounts applied reaching pests, by David Pimentel and Lois Levitan. BioScience, v. 36, Feb. 1986: 86-91.

"Often, less than 0.1% of pesticides applied to crops reaches target pests. . . . Excess pesticide moves throughout the environment, contaminating soil, water, and biota."

----- Water resources in food and energy production, by David Pimentel and others. BioScience, v. 32, Dec. 1982: 861-867.

"Conflicts for water between US agriculture and energy sectors are projected to increase. Currently agriculture consumes 83% of the water withdrawn, and an increase of 17% is projected by the year 2000. At the same time, a major synfuel program from coal and oil shale could increase water consumption for energy production 4- to 30-fold over present levels.

A significant portion of this growth in water demand will occur in the western states where most irrigated agriculture and one-half of US coal reserves are located. Environmental restrictions and the necessity to maintain aquatic ecosystems are additional constraints."

Portney, Paul R., ed. Current issues in natural resource policy. Washington, Resources for the Future, 1982. 300 p.
Partial contents.--The public lands, by R. Nelson.--Nonfuel minerals, by H. Landsberg, J. Tilton and R. Haas.--Endangered species, by W. Harrington and A. Fisher.--Marine fisheries, by L. Anderson.--The global climate, by J. Firor and P. Portney.--Water supplies, by K. Frederick.--Agricultural land, by P. Crosson and R. Haas.--Private forests, by M. Clawson.

Reilly, William K. Soils, society, and sustainability. Journal of soil and water conservation, v. 39, Sept.-Oct. 1984: 286-290.
Discusses changes in U.S. agriculture over the last 50 years which have led to decreased political power of farmers and increased financial pressure to achieve short-term profitability. Maintains that soil conservationists should work now to shape policies that integrate farmers' financial needs and sustainability needs of society.

Risser, James. Organic farming: Des Moines register, June 10, 1984, p. 1, 9A; June 11, p. 1, 2A; June 12, p. 1, 2A; June 13, p. 1, 8A; June 14, p. 1, 10A; June 15, p. 1, 7A.
These five articles explore the political debate over USDA's policies on organic farming; research findings on the productivity and economics of organic farming; two institutions which advocate organic methods, Rodale Research Center and the Land Institute; and controversy surrounding the Agricultural Productivity Act, which would fund a research study on organic farming.

Rodale, Robert. Alternative agriculture. Journal of soil and water conservation, v. 39, Sept.-Oct. 1984: 294-296.
Defines regenerative agriculture; criticizes conventional agriculture and conservation for contributing to soil erosion. Urges conservation leaders to reinvert conservation within the regenerative agriculture approach, which he predicts will become the conventional approach 50 years hence.

Sampson, R. Neil. Soil conservation. Sierra, v. 68, Nov.-Dec. 1983: 40-44.
Explains soil erosion and various soil-conservation systems, and suggest policy reforms for the Federal Government.

Schneider, Keith. Crisis at Kesterson. Amicus journal, v. 7, fall 1985: 22-27.
"Kesterson represents the end of an era when the government encouraged unlimited growth for irrigated farming . . . . Across California, and the rest of the arid West, the water that helped deserts bloom during the last three decades is now threatening to make much of the land worthless again."

Shortle, James S., and Donald J. Epp. The environmental connection. East Lansing, Cooperative Extension Service, Michigan State University, 1985. 8 p. (Farm and food system in transition, FS37)
"This paper presents an overview of several prominent environmental policy issues and their implications for the production of agricultural commodities and the quality of the rural environment. . . . The issues upon which we focus are agricultural nonpoint source pollution, ground water contamination, crop losses due to air pollution, and climatic change."

Soil and water conservation: background for 1985 farm legislation. Washington, U.S. Dept. of Agriculture, Soil Conservation Service, 1985. 37 p. (Agriculture information bulletin no. 486)

Outlines the role of the USDA in conservation programs from the early 1930s to 1984. Topics covered include the status, condition, and trends of soil and water resources, existing USDA conservation programs; state and local conservation programs; and ties between USDA commodity and conservation programs.

Soil conservation in America: what do we have to lose? Prepared by the American Farmland Trust. Washington, The Trust, c1984. 132 p.
Presents results of an eighteen-month study, concluding that "one of America's most serious environmental problems, soil erosion on U.S. cropland, can be substantially solved at a reasonable cost, within the decade" and proposing a new strategy for soil conservation on U.S. cropland. Includes 23 recommendations for implementing the strategy.

Steinhart, Peter. Soil: we can't grow when it's gone. National wildlife, v. 23, Feb.-Mar. 1985: 15-22.
Describes soil erosion in the U.S., which accounts for an estimated loss of six billion tons of topsoil annually. Discusses strategies for conservation, including a conservation reserve, cross-compliance, and conservation tillage.

Stokes, Bruce. Bread and water: irrigation policies and politics.- Sierra, v. 68, Mar.-Apr. 1983: 39-42, 44, 46.
Discusses the need for improved management of irrigation: "To be successful in the long run, the technical, managerial and, ultimately, the political processes of irrigation development require a new water ethic to help balance the complex interests involved in developing water resources for agriculture."

U.S. Congress. House. Committee on Science and Technology. Subcommittee on Natural Resources, Agriculture Research and Environment. Agriculture and water use: present and future issues. Hearing, 98th Congress, 1st session. Oct. 25, 1983. Washington, G.P.O., 1984. 92 p.
"No. 65"

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Agricultural land availability: papers on the supply and demand for agricultural lands in the United States. Washington, G.P.O., 1981. 491 p.
At head of title: 97th Congress, 1st session. Committee print.
13 papers discuss the availability, adequacy of supply, and the quality of U.S. agricultural and rural lands.

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Subcommittee on Agricultural Research and General Legislation. Agricultural Productivity Act of 1983. Hearing, 98th Congress, 2nd session, on S. 1128. June 14, 1984. Washington, G.P.O., 1984. 276 p. (Hearing, Senate, 98th Congress, 2nd session. S. Hrg. 98-1018)

U.S. Congress. House. Committee on Interior and Insular Affairs. Subcommittee on Water and Power Resources. Agricultural drainage problems and contamination at Kesterson Reservoir. Hearing, 99th Congress, 1st session. Washington, G.P.O., 1985. 632 p.
"Serial no. 99-3"
Hearing held in Los Banos, CA, Mar. 15, 1985.

The Vanishing farmland crisis: critical views of the movement to preserve agricultural land. Published for the Political Economy Research Center, Bozeman, Montana by the University Press of Kansas, c1984. 169 p. (Studies in government and public policy)

Contents.--The issues, by P.--The market allocation of land to agriculture, by B. Delworth Gardner.--Reexamining the "Shrinking" Farmland Crisis, by C. B. Luttrell.--The dynamics of soil erosion in the United States, by J. L. Simon.--Urban development and agricultural land markets, by W. Fischel.--Lessons from the economic calculation debate, by E. C. Pasour, Jr.--Agricultural zoning: a private alternative, by R. H. Nelson. --Regulating agriacultural land use, by J. Baden.

F. Agricultural Research Issues

Agricultural policies, research programs, 1979-1984. Beltsville, Md., U.S. National Agricultural Library, 1984. 23 p. (Quick bibliography series) "NAL-BIBL. 85-01"
Lists 276 citations from the AGRICOLA database.

Biotechnology and the environment: risk and regulation. Edited by Albert H. Teich, Morris A. Levin and Jill H. Pace. Washington, American Association for the Advancement of Science, 1985. 201 p.
"Proceedings of a Seminar Series conducted by the American Association for the Advancement of Science for the U.S. Environmental Protection Agency." Seminars held in Washington, D.C. between Nov. 1982 and Oct. 1983.

Doyle, Jack. Biotechnology research and agricultural stability. Issues in science and technology, v. 2, fall 1985: 111-124.
"Argues that biotechnology should be applied in ways that lower costs to farmers, reduce chemical dependency, increase production efficiency, broaden genetic diversity, and enhance biological and economic stability in agriculture here and abroad. Yet without changes in our agricultural research policy, many of these goals are unlikely to be achieved."
Includes a comment "A view from Congress" by George E. Brown, Jr.

Equity implications of public policy in an unstable agricultural economy. American journal of agricultural economics, v. 67, May 1985: 423-445.
Contents.--The role of public policy in the diffusion of improved agricultural technology, by G. Feder and R. Slade.--Human capital, adaptive ability, and the distributional implications of agricultural policy, by W. Huffman.--Risk aversion, technology choice, and equity effects of agricultural policy, by R. Just and D. Zilberman.
Discussion by Robert E. Evenson and Willis Peterson.

FY 1985 priorities for research, extension, and higher education, a report to the Secretary of Agriculture [by the] Joint Council on Food and Agricultural Sciences. [Washington] The Council, 1984. 37 p.
"This report, the second of its kind prepared by the joint Council on Food and Agricultrual Sciences, discusses the most important issues and priorities for United States agricultural research, extension and higher education for Fiscal year 1985. In addition, the report dicusses the natural and human resources required to address the noted priorities and roles of the Federal, State and private performers in accomplishing those priorities. This report and the manner in which the information was derived is evidence that the hgihly decentralized and diversified system, involving Federal and State supported research and education agencies and privately supported research insitutions and organizations, does coordinate and plan."

Johnson, Glenn L., and Sylvan H. Wittwer. Agricultural technology until 2030: prospects, priorities, & policies. East Lansing, Michigan State University Agricultural Experiment Station, 1984. 61 p. (Special report 12)
"Projections for American agriculture indicate that international competition in commodity markets, possible energy shortages and foreign exchange needs to buy energy, demands for improved world and U.S. diets, and population growth make it advantageous for the United States to develop capacity to double agricultural production in the next half-century or so . . . . we believe it to be nationally advantageous to

strive for a 60 percent increase in capacity by 1010 and a 100 percent increase by 2030." This report dicusses the problem-solving, subject-matter, and basic research needed to attain these advances in capacity.

Frankenberger, Timothy R. Adding a food consumption perspective to farming systems research. Washington, U.S. Dept. of Agriculture, Office of International Cooperation and Development in cooperation with U.S. Agency for International Development, Bureau for Science and Technology, 1985. 65 p.

"Farming systems research (FSR) projects should more effectively incorporate a food consumption perspective in the design and testing of new agricultural technology." Report discusses linkages between agricultural production and consumption patterns; these include seasonality of production, crop mix, income, role of women, labor requirements, and market prices. Maintains that FSR efforts which ignore food consumption considerations are less likely to be accepted by farmers or to enhance their well-being.

Kalter, Robert J. The new biotech agriculture: unforeseen economic consequences. Issues in science and technology, v. 2, fall 1985: 125-133.

The author "traces some of the surprising consequences that biotechnology will have for agriculture and social structure," focusing on the example of bovine somatotropin which can increase the milk output of dairy cows up to 40 present, and which can be in production by 1988.

Lipman-Blumen, Jean, and Susan Schram. The paradox of success: the impact on priority setting in agricultural research and extension. Washington, U.S. Dept. of Agriculture, Science and Education, Office of the Assistant Secretary, 1984. ca. 150 p. in various pagings.

"This study provides an organizational analysis of priority setting in the complex, decentralized U.S. agricultural research and extension system. Framed by the paradox that U.S. agriculture's immense 20th-century success has spawned increasing criticism, the study addresses a central question: 'How is it possible to set and maintain priorities for publicly-funded research and extension programs which are subject to perturbations caused by: a) the cyclical political process; and b) nature-based agricultural emergencies?'"

Plant breeding and biotechnology. BioScience, v. 36, Jan. 1986: 29-39.

"New directions in agricultural research highlight potential conflicts of interest between the public and private sectors."

Plant germplasm: conservation and use. Prepared by National Plant Genetic Resources Board. Washington, U.S. Dept. of Agriculture, 1984. 20 p.

Describes the program of the National Plant Genetic Resources Board. "The Task is to advise on policies related to the collection, description, maintenance, evaluation, and effective utilization of the living resources represented by crop cultivars and primitive and wild forms of our Nation's crops."

Plant germplasm preservation and utilization in U.S. agriculture. Ames, Iowa, Council for Agricultural Science and Technology, 1985. 35 p. (Report no. 106)

Preservation of seeds or other forms of germplasm of commercial crops is an important world need. This report describes the current status of organizations for plant variety preservation and utilization. The controversial genetic vulnerability and genetic diversity issues are also considered.

Plucknett, Donald L., and Nigel J. H. Smith. Sustaining agricultural yields. BioScience, v. 36, Jan. 1986: 40-45.

Maintenance research is agricultural research undertaken to uphold yield gains achieved through plant breeding. It is an effort to sustain productivity and temper oscillations in crop and livestock yields. This article reviews the principles of maintenance research, outlines its scope and dimensions, and discusses its policy implications.

Ruttan, Veron W. Agricultural research policy. Minneapolis, University of Minnesota Press [1982] 369 p.

Partial contents.--Technical change and agricultural development.--The agricultural research institution.--National agricultural research systems.--The international agricultural research system.--The private sector in agricultural research.--Institutional and project funding of research.--The economic benefits from agricultural research.

A Survey of U.S. agricultural research by private industry III. Bethesda, Md., U.S. Agricultural Research Institute, 1985. 16 p.

"This is the third in a series of surveys conducted by the Agricultural Research Institute to obtain data on the areas of emphasis and magnitude of expenditures by private industry for agricultural research." Presents data on number of scientist years by degree and area of research; expenditures by area; percent of research budget for basic, applied, and developmental research; and other aspects of agricultural research in industry.

Thompson, Roger. Genetic breakthroughs. Washington, Congressional Quarterly, 1986. 3-18 p.

Contents.--Regulating biotechnology.--Reshaping agriculture.--Disease-control potential.

U.S. Congress. House. Committee on Science and Technology. Subcommittee on Natural Resources, Agriculture Research and Environment. The nation's long-term agriculture research needs. Hearings, 97th Congress, 2nd session. July 27 and 29, 1982. Washington, G.P.O., 1983. 371 p.

"No. 152"

U.S. Congress. Office of Technology Assessment. An Assessment of the United States food and agricultural research system. Washington, For sale by the Supt. of Docs., G.P.O., 1981. 212 p.

"OTA-F-155"

Partial contents.--The role and development of public agricultural research.--Measuring costs, benefits, burdens, and quality of research.--Determining research proprities.--International dimension of research.--Implications for research funding.

U.S. General Accounting Office. Biotechnology: the U.S. Department of Agriculture's biotechnology research efforts; briefing report to the Chairman, Committee on Science and Technology, House of Representatives. Oct. 1985. Washington, G.A.O., 1985. 80 p.

"GAO/RCED-86-39BR"

The purpose of this report is to "identify and document all of the biotechnology research projects being funded in whole or in part by USDA."

----- Long-range planning can improve the efficiency of agricultural research and development; report to the Honorable George E. Brown, Jr., House of Representatives. Washington, 1981. 31 p.

"CED-81-141, July 24, 1981"

Evaluates proposed legislation which would require the Dept. of Agriculture, in conjunction with the states, to develop a national agricultural research and development plan.

U.S. National Agricultural Research and Extension Users Advisory Board. Science and policy issues: a report of citizen concerns and recommendations for American agricultural research. Washington, The Board, 1984. 66 p.

"This report focuses on two issues which the Users Advisory Board believes will have far reaching consequences for the future of U.S. agriculture: First, the science of cellular and molecular biology, commonly called biotechnology, and second, the need to exploit the potential for expanding U.S. and world agricultural markets."

U.S. soybean production and utilization research: a report to the Senate Committee on Agriculture, Nutrition and Forestry and House Committee on Agriculture. S.l. Soybean Research Advisory Institute, 1984. 69 p.

Report presents the finding of the Institute and includes recommendations "for necessary actions to ensure that an effective soybean research program is carried out in the United States."

G. Other Issues

America's changing diet. FDA consumer, v. 19, Oct. 1985: 4-25.
Contents.--America's changing diet: special report.--For fruits and vegetables, Americans favor 'fresh.'--Eggs and dairy foods: dietary mainstays in decline.--Fish and fowl lure consumers from red meat, by C. Lecos,--Soft drinks and six-packs quench our national thirst, by R. Miller.

Burbee, Clark R., and Carol S. Kramer. Food safety issues for the eighties: their implications for agriculture. East Lansing, Cooperative Extension Service, Michigan State University, 1985. 8 p. (Farm and food system in transition, FS36)
Discusses consumers' concerns about food safety and developments in the food industry that have influenced food firms, such as safety standards, regulations, cost of meeting consumer concerns, marketing problems, and misused or misunderstood drugs and chemicals. "Achieving the goal of increased food safety to satisfy domestic and international market needs will require both public and private sector involvement."

Cooperative extension and agricultural profitability--intensive assistance for financially distressed farmers. Washington U.S. Dept. of Agriculture, Extension Service, 1985. 16 p.
Reprinted in this volume.

Bolen, Kenneth R., and Leo E. Lucas. Regaining farm profitability in America: a Cooperative Extension response. Lincoln, Nebraska, Department of Agricultural Communications, Insititute of Agriculture and Natural Resources, University of Nebraska-Lincoln, 1984. 18 p.
Recommends several Cooperative Extension education programs to help farmers improve economic efficiency, increase farm (family) financial management, relate to stress management, improve NSL management analysis, increase understanding of international economics and trade, and improve marketing strategies. Methodologies to be used include systems approaches, in-depth workshops, computer analysis, one-on-one counseling, and the use of mdoern communications technology.

Five-year plan for the food and agriculture and sciences; a report to the Secretary of Agricultue [by the] Joint Council on Food and Agricultural Sciences. [Washington] The Council, 1984. 67 p.
Presents a conceptual plan devised from the problem, identified in a related study of long-term needs assessment for food and agriculture. Addresses the following categories of concerns, listing long-range goals, short-range objectives, and present and projected resources allocation for each: soil, water, and air, forest, range, and wildlife; crop production and protection; animal production and protection; processing, marketing, and distribution; agriculture and resource policy; human nutrition; youth, family, and consumer programs; community and rural development; international science and education programs; scientific expertise in agriculture; biotechnology; information systems and communication technology; equipment and facilities.

Frank, Richard L. Food labeling and inspection issues--1981-1983: living with the regulators. Food drug cosmetic law journal, v. 38, Oct. 1983: 355-367.
"This article identifies and briefly describes the principal regulatory changes in actions of 1982, focusing on the food inspection and labeling programs enforced by FDA and USDA and the impact the changes in these programs have had upon the food industry, federal and state governments, and the consumer."

Grumbly, Thomas P. A food regulatory policy for the 1980s: building a foundation of trust. Food drug cosmetic law journal, v. 39, July 1984: 350-355.

In the context of the "Reagan revolution," discusses four main areas which "if diligently pursued, can produce desirable business and public policies." These are: scientific convergence, corporate responsiveness, institutional pragmatism, and respect for the law.

Hutt, Peter Barton, and Peter Barton Hutt, II. A history of Government regulation of adulteration and misbranding food. Food drug cosmetic law journal, v. 39, Jan. 1984: 2-73.

Covers government regulation of food adulteration and misrepresentation in ancient times, in England from 1000-1875 and throughout U.S. history. Discusses the major U.S. legislation.

Smith, Thomas Blaisdell. A market basket of food hazards: critical gaps in Government protection; report. Washington, Public Voice, 1983. 106 p.

Partial contents.--Inspection of fish is inadequate to protect the public health.--Harmful pesticide residues on fresh produce.--Meat and poultry products contaminated with dangerous residues.--Use of human drugs in meat production threatens their effectiveness in treating human disease.--Food additives constituent policy would allow the use of carcinogenic additives in food.

Summary: needs assessment for the food and agricultural sciences; a report to Congress form the Secretary of Agriculture [by the] Joint Council on Food and Agricultural Sciences. [Washington] G.P.O., 1984. 76 p.

Partial contents.--Multiple demands facing U.S. agriculture as the nation approaches the year 2000 and beyond.--How science and education can help U.S. agriculture meet changing demands.--Needs of science and education system to continue solving problems of U.S. agriculture.--Performers of research, extension, and higher education.

Excerpted in this volume.

U.S. Congress. House. Committee on Appropriations. Subcommittee on Agriculture, Rural Development and Related Agencies. Agriculture, rural development and related agencies appropriations for 1986. Hearings, 99th Congress, 1st session. Washington, G.P.O., 1985. 532 p.

Part 4.--Agricultural programs.--Agricultural Cooperative Service.--Economic Research Service.--Statistical Reporting Service.--World Agricultural Outlook Board.--Animal and Plant Health Inspection Service.--Food Safety and Inspection Service.

U.S. Congress. House. Committee on Government Operations. FDA's monitoring of pesticide residues in the nation's food supply: lessons from the ethylene dibromide (EDB) experience; sixty-fifth report. Washington, G.P.O., 1984. 27 p. (Report, House, 98th Congress, 2nd session, no. 98-1165)

U.S. Congress. House. Committee on Government Operations. Employment and Housing Subcommittee. Job training partnership act and farmers. Hearing, 99th Congress. 1st session. Nov. 15, 1985. Washington, G.P.O., 1986. 134 p.

U.S. Congress. House. Committee on Science and Technology. Subcommittee on Natural Resources, Agriculture Research and Environment. Agricultural weather services. Joint hearings before the Subcommittee on Natural Resources, Agriculture Research and Environment of the Committee on Science and Technology and the Subcommittee on Department Operations, Research, and Foreign Agriculture of the Committee on Agriculture, House of Representatives, 98th Congress, 2nd session. June 27-28, 1984. Washington, G.P.O., 1985. 402 p.

"No. 149"

"Serial no. 98-90"

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. The food stamp program: history, description, issues, and options. Washington, G.P.O., 1985. 409 p. (Print, Senate, 99th Congress, 1st session, committee print, S. Prt. 99-32)

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. Subcommittee on Nutrition. Reauthorization of WIC, the commodity supplemental food program. Hearing, 99th Congress, 1st session. June 17, 1985. Washington, G.P.O., 1986. 98 p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99-401)

U.S. General Accounting Office. Monitoring and enforcing food safety--an overview of past studies; study. Washington, G.A.O., 1983. 85 p.
"GAO/RCED-83-153, Sept. 9, 1983"
"GAO conducted this study to bring together the views of past studies by groups outside GAO about needed food safety statutory and organizational changes, as well as to provide an overview of past GAO reports on food safety program administration and to update the status of agencies' program improvements."

----- Federal regulation of meat and poultry products--increased consumer protection and efficiencies needed; report to the Congress by the Comptroller General of the United States. Washington, G.A.O., 1983. 42 p.
"GAO/RCED-83-68, May 4, 1983"
"To better protect the public, the Service [Dept. of Agriculture's Food Safety and Inspection Service] should establish specific standards and labeling requirements on certain processed poultry products as has been done for comparable processed meat products." Discusses the controversy concerning mechanically separated meat (MSM).

----- Need to foster optimal use of resources in the Special Supplemental Food Program for Women, Infants, and Children (WIC); report to the Secretary of Agriculture. Sept. 27, 1985. Washington, G.A.O., 1985. 99 p.
"GAO/RCED-85-105"
"Discusses the need to improve management effectiveness and make better use of limited resources in the Food and Nutrition Service's Special Supplemental Food Program for Women, Infants, and Children (WIC)."

----- Overview and perspectives on the Food Stamp Program; report. Apr. 17, 1985. Washington, G.A.O., 1985. 79 p.
"GAO/RCED-85-109"
"To assist in congressional deliberations on reauthorizing the Food Stamp Program as part of the 1985 farm bill, GAO has highlighted five major program issues: program accountability and integrity, program simplification, nutritional adequacy, interrelationship with other food assistance programs, and program coverage and eligibility. For each issue, GAO's report discusses the principal concerns it sees, what has been done regarding those concerns, and what more should be considered or done."

Warner, Paul D., and James A. Christenson. The Cooperative Extension Service: a national assessment. Boulder, Colo., Westview Press, 1984. 195 p.
Partial contents.--Extension in changing times.--Evaluation in extension.--Public awareness of extension.--Who are extension's clientele? --Some clients are satisfied and some are not.--Support for extension.--The county as the focus of service delivery.--Summary and priorities.--Policy issues facing extension.

WHAT AGRICULTURAL POLICY WOULD BEST SERVE THE ECONOMIC INTERESTS OF THE UNITED STATES?

A Guide to Information Sources on the 1986-1987 National High School Debate Topic

by
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April 1, 1986

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A GUIDE TO INFORMATION SOURCES
on the 1986-1987
High School Debate Topic

INTRODUCTION

This research guide identifies sources of information on agricultural policy and related topics that will be discussed by high school debaters. It describes reference and research tools and provides search strategies that might be used when consulting these tools.

The guide is divided into two parts. The first part describes basic research sources, and the second part describes specialized agricultural policy reference sources.

Search terms, which may be used separately or in combination, are provided in some cases for each resolution of the debate topic.

I. RESOLVED: That the Federal Government should adopt an export program to significantly expand foreign markets for United States agricultural products.
(AGRICULTURAL EXPORTS)

II. RESOLVED: That the Federal Government should guarantee an annual cash income to farmers in the United States.
(FARM INCOME)

III. RESOLVED: That the Federal Government should implement a comprehensive long-term agricultural policy in the United States.
(AGRICULTURAL POLICIES)

In the guide, the resolutions are referred to in the abbreviated form listed in parentheses above.

The search terms listed for each of the topics are not exhaustive. The primary terms are included to help the high school debater begin his or her search for materials on these topics.

RESEARCH SOURCES

This is a list of key research tools described in this guide, and the page where each is mentioned.

American Statistics Index 6
Bell and Howell Newspaper Indexes 4
Bibliography of Agriculture 9
Business Index 9
Business Periodicals Index 10
CIS Index 5
Congressional Index 6
Congressional Quarterly Weekly Report 4
Congressional Record 5
Digest of Public Bills and Resolutions 5
Encyclopedia of Associations 11
The Food Lobbyists 11
Library of Congress Subject Headings 1
Magazine Index 2
Major Legislation of the Congress 5
Monthly Catalog of United States Government Publications 6
National Journal 5
National Newspaper Index 4
New York Times Index 3
NEXIS 4
Official Washington Post Index 3
Public Affairs Information Service 2
Reader's Guide to Periodical Literature 3
Social Sciences Index 10
Social Science Citation Index 10
Statistical Reference Index 6
The United States Government Manual 1985-86 12
University Microfilms Newspaper Indexes 4
Wall Street Journal Index 3
Washington Information Directory 12
Weekly Compilation of Presidential Documents 6

PART I. GENERAL REFERENCE SOURCES

BOOKS

Many libraries around the country, especially large college and research libraries, use Library of Congress subject headings in their catalogs. To learn how books on agricultural policy are categorized in these libraries, consult the two volume guide, Library of Congress Subject Headings; it is usually kept near the automated or card catalog. The most relevant LC subject headings for agricultural policy are listed below:

GENERAL:
- Agriculture
- Agriculture--Economic aspects
- Agriculture and state
- Agricultural industries
- Farm life
- Farmers
- Food industry and trade

AGRICULTURAL EXPORTS:
- Produce trade
- Foreign trade promotion
- Export sales
- Grain trade

FARM INCOME:
- Farm income
- Agricultural prices
- Agricultural price supports
- Agriculture--Economic aspects
- Guaranteed annual income
- Income maintenance programs

AGRICULTURAL POLICIES:
- Agriculture and state
- Agriculture--Economic aspects
- Agricutural law and legislation
- Agricultural administration
- Food supply--Government policy
- Agricultural credit
- Rural development
- Farms, Small
- Family farms
- Farm ownership
- Agricultural price supports
- Agricultural research

Agricultural pollution
Farm corporations
Farm mechanization
Agricultural education
Soil conservation
Farmland protection
Agricultural innovations

JOURNAL ARTICLES

Citations to journal articles and other materials about agricultural policy can be found in a number of printed indexes and online bibliographic data bases. The materials covered by the printed indexes are briefly described here and search strategies are given.

Online bibliographic data bases enable the researcher to locate citations to journal articles and other materials quickly by using a computer terminal to search a machine-readable file. Online data bases allow the researcher to combine search terms in ways that are impossible in a printed index or library catalog and to simultaneoulsy search material that would be contained in printed index volumes covering several years. Many of the printed indexes described in this guide are also available as online data bases. A reference librarian can advise you on the availability of computerized search services in your area; there may be a fee for use.

MAGAZINE INDEX (machine format)

Magazine Index provides citations to materials in over 400 popular magazines, focusing on coverage of current affairs, leisure time activities, arts, sports, and science and technology. References from the last five years are listed alphabetically by subject and author in one alphabetical display on the Magazine Index microfilm reader-terminal. The Index is updated monthly, and uses Library of Congress subject headings. Consult the list given above or the two-volume Library of Congress Subject Headings for appropriate search terms.

PUBLIC AFFAIRS INFORMATION SERVICE (PAIS)

PAIS is a subject index of books, pamphlets, government publications, reports of public and private agencies, and periodical articles relating to economic and social conditions, public administration, and international relations. It is issued monthly; there are also three quarterly cumulations and an annual bound volume with an author index. Some search terms are listed below; also use PAIS' cross-references.

GENERAL: Agriculture
Agricultural products
Agricultural history
Business and agriculture
Farms

AGRICULTURAL EXPORTS: Agricultural products--Export-import trade

FARM INCOME: Farm income
Income--U.S.--Guaranteed income

AGRICULTURAL POLICIES: Agricultural policy
Agricultural products--Price supports
Agriculture
Agricultural economics
Agricultural research
Farm ownership
Farm population
Agricultural credit
Debts, Agricultural
Soil conservation
Pesticides

READER'S GUIDE TO PERIODICAL LITERATURE

The *Reader's Guide* is an author/subject index to over 180 periodicals of general interest published in the U.S. and Canada. It is published twice a month September to December and in March, April, and June; it appears monthly in January, February, May, July, and August. The quarterly and annual cumulations can expedite your search. Search under Library of Congress subject headings and the *Reader's Guide*'s cross-references.

NEWSPAPER ARTICLES

NEW YORK TIMES INDEX

The *New York Times Index* provides extensive abstracts for articles appearing in the *New York Times*. It is issued twice a month, with quarterly and annual cumulations. Its use can be confusing; consult "How to use the New York Times Index" in the index for guidance. Check under "Agriculture" for references.

OFFICIAL WASHINGTON POST INDEX

The *Index* provides access to all substantial newsworthy items in this paper. It is issued monthly and cumulated annually. Check under "Agriculture."

WALL STREET JOURNAL INDEX

The *Wall Street Journal Index* is issued monthly and has annual cumulations. Check under "Agriculture" in the General News section.

NATIONAL NEWSPAPER INDEX (machine format)

National Newspaper Index indexes the Christian Science Monitor, New York Times, Wall Street Journal, Los Angeles Times, and Washington Post. References from the last five years are listed alphabetically by subject on a microfilm reader-terminal. Search under Library of Congress subject headings, and use the cross-references. An online version of this index is available commercially.

OTHER NEWSPAPER INDEXES

The Bell & Howell Co. produces a set of indexes which list articles appearing in the Boston Globe, Christian Science Monitor, Denver Post, Detroit News, Houston Post, Los Angeles Times, New Orleans Times-Picayune, San Francisco Chronicle, St. Louis Post-Dispatch, and USA Today. University Microfilms International produces monthly and annual indexes for the Atlanta Journal, Atlanta Constitution, Chicago Tribune, Los Angeles Times, and the Minneapolis Star and Tribune. In addition, many newspapers are indexed locally; ask a public librarian about indexes to your local newspapers.

NEXIS

NEXIS is an online search and retrieval service with numerous subfiles of information. The NEXIS database includes the full text of many newspapers, including Legal Times, National Law Journal, the New York Times, the Washington Post, and the Christian Science Monitor; full text of major wire services, including AP, UPI, and Reuters; full text of many newsletters and magazines; full text of some government publications; abstracts to many current affairs magazines and major U.S. newspapers; and other information. Ask a reference librarian if NEXIS is available in your area.

LEGISLATIVE INFORMATION

Congressional activities on agricultural policy issues may be monitored by searching the following printed publications:

CONGRESSIONAL QUARTERLY WEEKLY REPORT

Congressional Quarterly Weekly Report provides current information on congressional activities, the progress of major bills, and background information on major policy issues. Important recent articles are indexed on the back cover of each issue. Consult this index under the heading "Agriculture." A quarterly and an annual index are also issued; search under headings that begin with the words "Agricultural," "Agriculture," and "Farm," and also use the cross-references.

Congressional Quarterly also publishes an annual volume which cumulates material from the weeklies. There is an index at the back of each volume.

NATIONAL JOURNAL

National Journal provides information on important executive branch and congressional actions. In addition to the semi-annual indexes, there is a page titled "Recent Articles" toward the end of most issues. Look under "Economy, Domestic" or "Agriculture." The semiannual index allows you to search under more specific topics.

CONGRESSIONAL RECORD

The Congressional Record provides an edited transcript of the activities on the floor of the House and the Senate. It is published each day Congress is in session. Subject and name indexes are published biweekly and cumulated annually. Search under "Agriculture" and "Food."

BILLS AND RESOLUTIONS

MAJOR LEGISLATION OF THE CONGRESS (MLC)

The MLC provides summaries of selected major legislation arranged by subject. It includes background on the issues and information on the content and status of major bills affecting that issue. The publication may be examined at a Government depository library or purchased from the Government Printing Office. Search under the heading "Agriculture and Food."

DIGEST OF PUBLIC GENERAL BILLS AND RESOLUTIONS

The Digest summarizes the essential features of public bills and resolutions and changes made in them during the legislative process. The Digest is published during each session of Congress in two cumulative issues and a final issue at the conclusion of the session. The Digest has sponsor/cosponsor, identical bills, short title, and subject indexes. Search under "Agriculture and Rural Affairs" and "Food and Food Industry."

CIS INDEX (Index to the Publications of the United States Congress)

The CIS Index, produced by the Congressional Information Service, abstracts all congressional publications except the Congressional Record. The Index is published monthly and cumulated quarterly and annually. Each issue of the Index is divided into index and abstract portions. Search in the index section under "Agriculture," "Agricultural policies," "Agriculture in foreign trade," and under headings that begin with the words "Agriculture," "Agricultural," "Farm," and "Farms;" also use the cross-references. Refer to the abstract section for full bibliographic information.

CONGRESSIONAL INDEX

The Congressional Index, published by the Commerce Clearing House, is a weekly looseleaf service providing content and status information for bills and resolutions pending in Congress. The progress of bills and resolutions is reported from the introduction of the legislation to the final disposition. Search under "Agriculture" and "Foods" in the subject index section.

GOVERNMENT PUBLICATIONS

MONTHLY CATALOG OF UNITED STATES GOVERNMENT PUBLICATIONS

The Monthly Catalog lists documents issued by all branches of the Federal Government. The Catalog has monthly, semiannual, and annual indexes arranged by author, title, subject, keywords, and series/report title.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS

The Weekly Compilation of Presidential Documents contains statements, messages, and other presidential materials released by the White House during the preceding week. The Weekly Compilation has weekly, quarterly, and annual indexes.

Statements of other Executive branch officials may be found in such sources as Executive agency publications, Congressional hearings, and in weekly news programs.

STATISTICAL SOURCES

AMERICAN STATISTICS INDEX (ASI)

The American Statistics Index indexes and describes the statistical publications of the U.S. Government, including periodicals, annuals, biennials, semi-annuals, and special publications. The Index provides access to statistical materials by subject, organization, name, issuing source, and title. The Index is published monthly and cumulated quarterly and annually. ASI is available online commercially.

STATISTICAL REFERENCE INDEX (SRI)

The Statistical Reference Index provides a guide and index to selected statistical reference material from non-Federal sources on a wide spectrum of subject matter. It includes the publications of trade, professional, and other non-profit associations and institutions, business organizations, commercial publishers, university and independent research centers, and State government agencies. The Index provides access by subject, organization, name, issuing source, and title. The Index is published monthly and cumulated annually.

PART II: AGRICULTURAL POLICY REFERENCE SOURCES

REFERENCE BOOKS

Agricultural statistics 1984. Prepared by the U.S. Dept. of Agriculture. Washington, The Dept. [for sale by the Supt. of Docs., G.P.O.] 1985. 558 p.

"Agricultural Statistics is published each year to meet the diverse need for a reliable reference book on agricultural productivity, supplies, consumption, facilities, costs, and returns."

Agriculture in the twenty-first century. Edited by John W. Rosenblum. New York, Wiley, 1983. 415 p.

Presents essays by agricultural experts, divided into five sections: natural resources and agriculture; agricultural research and technology; the farmer of tomorrow; financing agriculture; and the world's expectations for agriculture.

Agriculture in the United States: a documentary history. Edited by Wayne D. Rasmussen. New York, Random House, 1975. 4 v.

These volumes cover Ameican agriculture from colonial times through 1973. "It is a major goal of the compiler of these volumes to show how change took place in farming in the United States. . . . Each section includes documents, generally in chronological order, illustrative of that topic and period. . . . The documents are illustrative of the major types of original material available for research in agricultural history. They include legislation, travel accounts, farm manuals, correspondence, diaries, articles from farm journals, advertisements, and reports of the Federal and State Departments of Agriculture, agricultural colleges, and experiment stations.

Benedict, Murray R. Farm policies of the United States, 1790-1950: a study of their origins and development. Millwood, N.Y., Kraus Reprint Co., 1975.

Aims at an impartial, overall picture of agricultural policies and their causes and effects.

Breimyer, Harold F. Farm policy: 13 essays. Ames, Iowa, Iowa State University Press, 1977. 121 p.

Contents.--Biological man.--Agrarian agriculture.--The (partial) industrialization of agriculture.--Coveted land.--Who makes farm policy?--What farmers are paid for: production vs. capital gains as income sources.--Price and income policy for an agrarian and industrial agriculture.--tempting attractions of direct deficiency payment programs.--Farming's noninstinct for self-preservation.--Farmers and their markets.--Hesitancy in cooperative action.--The food reserve issue.--Denouement.--Appendix I: In search of the good society.--Appendix II: Agrarianism and the American heritage.

Cochrane, Willard W., and Mary E. Ryan. American farm policy, 1948-1973. Minneapolis, University of Minnesota Press, 1976. 431 p.

This reference book provides a setting for policy developments, describes the evolution and content of the programs, and explores the policy formulation process. It describes in some detail farm policy legislation of 1948-1973, focusing on the mechanics, magnitudes, interrelations, and costs of programs.

Guither, Harold D. The food lobbyists. Lexington, Mass., Lexington Books, 1980. 358 p.

Presents an 180-page analysis and a lengthy directory of the organized forces that seek to influence the course of agribusiness legislation in Washington.

Halcrow, Harold G. Agricultural policy analysis. New York, McGraw-Hill, 1984. 342 p.

"This book is designed as a comprehensive text for the first general course in agricultural policy or agricultural and food policy." It assumes knowledge of the principles of economics.

Knutson, Ronald D., J. B. Penn, and William T. Boehm. Agricultural and food policy. Englewood Cliffs, N.J., Prentice-Hall, c1983. 387 p.

Designed as an undergraduate textbook in agricultural and food policy, this book focuses on current issues. It covers basic policy processes, the international perspective, the domestic farm situation, consumer concerns, resources issues, and agriculture in the national economy.

Krebs, Alfred H. Agriculture in our lives: an introduction to agricultural business and natural resources. 5th ed. Danville, Ill., Interstate Printers and Publishers, 1984. 788 p.

This is a basic-level textbook on agriculture and agricultural science.

McGraw-Hill encyclopedia of food, agriculture & nutrition. New York, McGraw-Hill, 1977. 732 p.

Includes more information on agriculture as a science than on agricultural policy.

1985 agricultural chartbook. Washington, U.S. Dept. of Agriculture, Economic Research Service [for sale by the Supt. of Docs., G.P.O.] 1985. 93 p. (Agriculture handbook no. 652)

Charts statistics of American agriculture including farm population and ownership, farmlands, rural development and economics, consumer statistics, food programs, trade and world production, and commodity trends. This is an annual publication.

1986 fact book of U.S. agriculture. Washington, U.S. Dept. of Agriculture, 1986. 131 p. (Miscellaneous publication no. 1063)

"Revised November 1985"

"The major subdivisions are: Farm Production, Income, and Values [which] deals with farm production goods; the industries and service organizations that produce the goods and services that farmers buy to produce food and fiber; and farm income, and values; II. The Farming Operation [which] covers the farm business itself which combines land, labor, management, and capital to produce farm products; III. Food Marketing [which] describes the system of transportation, processing and merchandising--including consumer education, advertising, and other consumer products ready for use in homes, restaurants, and institutions here and overseas; IV. Agricultural Services [which] deals with activities of the U.S. Department of Agriculture and other government and private agencies that support modern agriculture--research, inspection, Extension, statistics, forest management, regulatory activities, grading services, credit, and income support; [and] V. The Rural Social Environment [which] pertains to the population, environment, and social problems of smaller towns and open country." This is an annual publication.

Schapsmeier, Edward L., and Frederick H. Schapsmeier. Encyclopedia of American agricultural history. Westport, Conn., Greenwood Press, 1975. 467 p.
Lists terms alphabetically, giving brief explanations for each.

Tweeten, Luther G. Foundations of farm policy. 2d. ed., rev. Lincoln, University of Nebraska Press, c1979. 567 p.
Provides both historical and current analytical perspectives.

Yearbook of agriculture. Washington, U.S. Dept. of Agriculture [for sale by the Supt. of Docs., G.P.O.] Compiled annually.
Each volume focuses on a different topic. In 1985, it was on U.S. agriculture in a global economy; in 1984, animal health; in 1983, using our natural resources; in 1982, food from farm to table.

INDEXES

Bibliography of Agriculture is a monthly index to the literature of agricultural and allied sciences, and is based primarily on information provided by the U.S. National Agricultural Library, Food and Nutrition Information Center, American Agricultural Economics Documentation Center, and Agriculture Canada. Most of the references pertain to technical agriculture, but some policy-oriented material is indexed. USDA and Extension Service publishers are indexed here. Check under terms beginning with "Agricultural" and "Policy" in the subject index to identify numbered references to look up in the main section of the Bibliography.

Business Index is a subject index of over 810 sources; it provides cover-to-cover indexing for over 460 business periodicals, and also indexes the Wall Street Journal, Barron's, New York Times business articles, and selected business articles from over 1100 general and legal periodicals. References from the last five years to date are listed alphabetically by subject in one alphabetical display on the microfilm reader-terminal. The Index is updated monthly and uses Library of Congress subject headings. Among the journals indexed are American Journal of Agricultural Economics, Feedstuffs, Implement and Tractor, National Food Review, and Successful Farming.

Business Periodicals Index

Business Periodicals Index is a subject index of over 300 business periodicals. It is published monthly except August, with a bound cumulation each year. It covers a wide range of business publications, including the American Journal of Agricultural Economics, Federal Reserve Bank of St. Louis Review and National Food Review. Search using Library of Congress subject headings and the index's cross-references.

Social Sciences Index

Social Sciences Index, published quarterly and cumulated annually, gives author and title access to articles from political science journals. Some of the economics and public policy journals include articles on agriculture. Check under "Agricultural policy" and Library of Congress subject headings; also follow the cross-references.

Social Science Citation Index

Social Science Citation Index, which covers hundreds of journals, is issued quarterly and annually. It differs from other indexes; there are no standard subject headings, but you may search by topic by looking up key words from an article's title in the Permuterm Subject Index and then referring to the Source Index for the full reference. Among the journals indexed are Agricultural Administration and Food Policy.

SELECTED PERIODICALS

Periodicals which address agricultural issues include:

Agribusiness, an International Journal
Agricultural Economics Research
Agricultural Outlook
Agricultural Research
Agri Finance
American Journal of Agricultural Economics
Ceres
Choices, the Magazine of Farm, Food, and Resource Issues
Farm Chemicals
Farm Journal
Farmline
Food Policy
Foreign Agriculture
Journal of Agricultural Taxation and Law
Journal of Soil and Water Conservation
Land and Water Review
National Food Review
Rural America
Rural Development Perspectives
Southern Journal of Agricultural Economics
Successful Farming
World Agriculture: Outlook and Situation

World Agricultural Regional Supplements

Newsletters tracking agricultural and food issues include:

Doane's Agricultural Report
Federal Reserve Bank of Chicago Agricultural Letter
Feedstuffs
The Food and Drug Letter
The Food and Fiber Letter
Food Chemical News
Inside U.S. Trade
Washington Food Report

GUIDES TO ORGANIZATIONS

There are hundreds of organizations with an interest in agriculture or agricultural policy; some of them may be able to provide information by correspondence. The list of books which follows is a selection of some of the many available guides to organizations.

Directory of State Departments of Agriculture. Prepared by the Agricultural Marketing Service, U.S. Dept. of Agriculture. [Washington] G.P.O., 1983. 59 p.

"This Directory of State Departments of Agriculture is compiled biennially by the Administrative Services Division, Agricultural Marketing Service, United States Department of Agriculture. . . . for administrative use in its programs."

Encyclopedia of associations. 20th ed. Detroit, Michigan, Gale Research Company, 1985. 4 v.

"The Encyclopedia of Associations consists of the following volumes: Volume 1, National Organizations of the United States, detailed descriptions of national trade, professional, and other organizations; Volume 2, Geographic and Executive Indexes, covering material in Volume 1; Volume 3, New Associations and Projects, periodic reports listing additional associations not included in Volume 1. Interedition service; Updating Service, periodic reports of important changes to associations listed in Volume 1 and Volume 3. Interedition service; Volume 4, International Organizations, detailed descriptions of international trade, professional, and other organizations; and, International Organizations Supplement, periodic reports listing additional associations not listed in Volume 4. Interedition service." Use the name and keyword index in Volume 1, Part 3.

Federal regulatory directory. 5th ed. Washington, Congressional Quarterly, 1986. 942 p.

Use the subject index to find information about agencies which deal with agriculture.

Guither, Harold D. The food lobbyists. Lexington, Mass., Lexington Books, 1980. 358 p.

Presents an 180-page analysis and a lengthy directory of the organized forces that seek to influence the course of agribusiness legislation in Washington.

Healthy harvest: a directory of sustainable agriculture and horticulture organizations, 1985. Edited by Susan J. Sanzone; illustrated by Janet Trowbridge Francoeur. Washington, Potomac Valley Press, 1985. 64 p.

Kutzner, Patricia L., and Nickola Lagoudakis. Who's involved with hunger: an organization guide for education and advocacy. 4th ed. Washington, World Hunger Education Service, 1985. 48 p.
Lists and describes over 200 organizations. They are divided into four sections: governmental, private agencies with a global focus, private agencies with a national focus, and regional U.S. organizations.

National trade and professional associations of the United States 1986. 21st ed. Washington, Columbia Books, 1986. 443 p.
This volume lists about 6,250 active national trade and professional associations, and labor unions. Check the subject index under "Agriculture" and "Agronomy."

1984-85 directory of professional workers in state agricultural experiment stations and other cooperating state institutions. Washington, Cooperative State Research Service, U.S. Dept. of Agriculture [for sale by the Supt. of Docs., G.P.O.] 1984. 237 p. (Agriculture handbook no. 305)
"Revised July 1984"
Lists institutions and individuals for each state.

State administrative officials classified by function 1985-86. Lexington, Ky., Council of State Governments, 1985. 281 p.
Under "Agriculture," lists the top agricultural official, with address and phone number, in each state.

State executive directory. Washington, Carroll Publishing Company, 1986. 426 p.
Published three times a year, this directory presents the personnel and structure of the executive, legislative, and judicial branches of all 50 states. Look for the department which handles agriculture in each state.

U.S. Dept. of Agriculture. Natural resources research directory. Washington, U.S. Dept. of Agriculture, U.S. Dept. of the Interior, 1984. 1 v. (circa 100 p.)
"The Directory describes the organizational structure for each Agency involved in national resources research and extension education." It covers the Agricultural Research Service, Cooperative State Research Service, Economic Research Service, Extension Service, Forest Service, Soil Conservation Service, Bureau of Land Management, Bureau of Mines, Fish and Wildlife Service, Geological Survey, and National Park Service. Under each agency, offices and contacts are listed by state.

United States Government Manual 1985-1986. Prepared by the U.S. Office of the Federal Register. Washington, G.P.O., 1985. 927 p.
Use the subject/agency index to identify Federal agencies with responsibilities in agriculture.

Washington information directory 1985-86. Washington, Congressional Quarterly, 1985. 965 p.
This directory lists both governmental and non-governmental organizations with headquarters or branch offices in Washington, D.C.

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PUBLICATIONS RELATING TO THE 1986-87 HIGH SCHOOL DEBATE TOPIC

United States Agricultural Policy: What agricultural policy would best serve the economic interests of the United States?

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___Agricultural Chartbook, 1985. *Contains agricultural statistics for calendar year 1985. Includes statistics on the farm, rural development, food and nutrition programs, international trade, and commodity trends.* 1985: 92 p.; ill.
A 1.76/2:985 S/N 001-019-00428-2 $ 3.50

___Agricultural Economics Research. (Quarterly.) *Contains papers relating to economic and statistical research in agriculture by Government bureaus and other cooperating agencies.* Subscription price: Domestic - $13.00 a year; Foreign - $16.25 a year. Single copy price: Domestic - $3.50 a copy; Foreign - $4.38 a copy. [AGER] (File Code 2Q) A 93.26: S/N 701-002-00000-8

___Agricultural Finance Statistics, 1940-1983. *Presents farm financial statistics including outstanding farm debt by State and lender and average interest rates for agricultural loans charged by selected lenders during the years of 1960-1983.* 1984: 55 p.
A 1.34:706 S/N 001-019-00336-7 2.25

___Agricultural Programs Adjustment Act of 1984, Public Law 98-258. An Act to Make Adjustments in the Commodity Programs for Wheat, Feed Grains, Upland Cotton, and Rice, to Provide Agricultural Credit Assistance, and for Other Purposes. Approved April 10, 1984. 1984: 13 p.
GS 4.110:98/258 S/N 022-003-96013-9 2.00

___Agricultural Statistics, 1984. *Intended to serve as a reference on agricultural production, supplies, consumption, facilities, costs, and returns. Consists chiefly of tables and statistics.* 1984: 568 p.
A 1.47:984 S/N 001-000-04437-1 12.00

___Agricultural Trade and Export Policy Commission Act, Public Law 98-412. Joint Resolution to Amend the Agriculture and Food Act of 1981 to Provide for the Establishment of a Commission to Study and Make Recommendations Concerning Agriculture-Related Trade and Export Policies, Programs, and Practices of the United States. Approved August 30, 1984. 1984: 6 p.
GS 4.110:98/412 S/N 022-003-96167-4 1.75

___Agriculture and Food Act of 1981, Public Law 97-98. An Act to Provide Price and Income Protection for Farmers, Assure Consumers an Abundance of Food and Fiber at Reasonable Prices, Continue Food Assistance to Low-Income Households, and for Other Purposes. Approved December 22, 1981. 1981: 145 p.
GS 4.110:97/98 S/N 022-003-92879-1 4.75

___Compilation of Statutes Relating to Soil Conservation, Set Aside, Acreage Diversion, Marketing Quotas and Allotments, Wheat Certificates, Commodity Corporation, Price Support, Export and Surplus Removal, Public Law 480, Crop Insurance, and Related Statutes as of January 1, 1985. 1985: 256 p.; looseleaf.
A 1.76:476/supp. S/N 001-000-04444-3 $ 6.00

___Differing Effects of Farm Commodity Programs on Land Returns and Farmland Values. *Reviews the effects of discontinuing farm programs in 1986. This study examines a hypothetical change in farm programs rather than a change in policy. Also discusses the changes in farm commodity programs on farmland values based upon factors such as: supply and demand; speed and scope of changes; land earnings; and land market financial resources.*
1985: 8 p. A 1.107:544 S/N 001-019-00420-7 1.00

___Dynamics of Comparative Advantage and the Resistance to Free Trade. *Presents possible trade strategies for developed and developing countries and discusses their implications for American agricultural trade.* 1985: 26 p.; ill. A 93.27:214 S/N 001-019-00396-1 1.00

___European Community (EC) Market for United States Agricultural Exports: A Share Analysis. *Assesses the market potential for all major United States exports.* 1983: 88 p.; ill. A 93.27:179 S/N 001-000-04326-9 5.00

___Fact Book of United States Agriculture, 1986. *Intended for use as a reference source for writers and speakers about agriculture or for reporters, editorial writers, farm organization leaders, and agribusiness managers. Includes chapters on farm production, farm operation, food marketing, agricultural services and the rural social environment.* 1985: 139 p.: revised ed.
S/N 001-000-04455-9 2.75

___Farm Credit Amendments Act of 1985, Public Law 99-205. 1985:
S/N 822-006-00205-4 1.00

___Farm Policy Perspectives: Setting the Stage for 1985 Agricultural Legislation. *Reflects the views of the United States Department of Agriculture, economists, farmers, State departments of agriculture, and private industry regarding farm policy and future agricultural legislation.* 1984: 262 p.
Y 4.Ag 8/3:S.prt.98-174
S/N 052-070-05924-9 6.50

___Farmline. (Monthly except January-February which is a combined issue.) *Written for a general agricultural audience, including farm analysts, agribusinesses, and farmers who want to keep up with major economic developments in the farm sector through the research and analysis of USDA's Economic Research Service. Wide-ranging articles report and analyze trends in farm production, foreign trade, commodity prices, land use and land values, farm finances, rural population and employment, productivity, policy, and other subjects.* Subscription price: Domestic - $24.00 a year; Foreign - $30.00 a year. Single copy price: Domestic - $2.50 a copy; Foreign - $3.13 a copy. [FRMLN] (File Code 2G)
A 93.33/2:10/4 S/N 701-021-00000-2

___Financial Constraints to Trade and Growth: The World Debt Crisis and Its Aftermath. *Examines the debt problems of 93 developing countries in their relationship to world trade and economic growth in the intermediate and longer term and the implications of this relationship for United States agricultural export prospects.* 1984: 35 p.; ill.
A 93.27:211 S/N 001-019-00391-2 $ 2.00

___Food Security Act of 1985: Major Provisions Affecting Commodities. *Describes the major provisions of the Food Security Act of 1985 that affect farm commodity supply and demand. Discusses issues such as price supports and erosion. The Food Security Act of 1985 sets the United States Farm policy through 1990.* 1986: 26 p.
S/N 001-019-00446-1 1.00

___Foreign Agricultural Trade of the United States. (Bimonthly and 2 Supplements.) *This publication, consisting chiefly of tables and statistics, contains information on exports and imports of agricultural commodities in the United States.* Subscription price: Domestic - $26.00 a year; Foreign - $32.50 a year. Single copy price: Domestic - $3.75 a copy; Foreign - $4.69 a copy. Supplemental Issues: Domestic - $8.00 a copy; Foreign - $10.00 a copy. [FATUS] (File Code 2B)
A 93.17/7: S/N 701-026-00000-4

___Increasing World Grain Market Fluctuations: Implications for United States Agriculture. *Describes foreign and domestic import and export trade policies which restrict United States grain trade.* 1985: 50 p.
A 1.107:541 S/N 001-019-00418-5 1.75

___Japanese and European Community Agricultural Trade Policies: Some United States Strategies. *Provides an analysis of the alternatives for the United States coarse grains policies as effected by Japanese and European Community trade policies.* 1984: 21 p.; ill.
A 93.27:204 S/N 001-019-00338-3 1.50

___Outlook and Situation Report: Outlook for United States Agricultural Exports. (Quarterly.) *Contains information on agricultural commodities exported from the United States. It also includes forecast information on the current and upcoming year.* Subscription price: Domestic - $13.00 a year; Foreign - $16.25 a year. Single copy price: Domestic - $3.50 a copy; Foreign - $4.38 a copy. [AGREX] (File Code 2Q)
A 93.43: S/N 701-039-00000-9

___Rural Development Perspectives. (Triannually.) *Covers articles on economic and social conditions in rural America and factors influencing rural development and persistent and emerging problems.* Subscription price: Domestic - $10.00 a year; Foreign - $12.50 a year. Single copy price: Domestic - $3.75 a copy; Foreign - $4.69 a copy. [RDP] (File Code 2T)
A 93.41/2: S/N 701-031-00000-8

___Strong Dollar Dampens Demand for United States Farm Exports. *Assesses the effect of changes in the dollar's value, adjusted for inflation on United States exports of wheat, corn, and soybeans.* 1983: 37 p.
S/N 001-000-04395-1 2.25

___Sweden's Agriculture Policy. *Provides an overview of complex agricultural policy developments in Sweden. Reviews parallels between Swedish agricultural policy, policies in the United States and the European Economic Community and the linkages between Sweden's system of income protection import barriers. Technical similarities between Swedish and American agricultural policies are also discussed.* 1982: 39 p.; ill.
A 93.27:175 S/N 001-000-04300-5 $ 4.25

___Technology, Public Policy, and the Changing Structure of American Agriculture: A Special Report for the 1985 Farm Bill. *Provides an analysis of emerging agricultural technologies, public policy, and structural change in the farm sector and the implications of these changes on agricultural legislation.* 1985: 99 p.; ill.
Y 3.T 22/2:2 Ag 8 S/N 052-003-00990-1 3.75

___Toward the Next Generation of Farm Policy, A Staff Study. *Discusses the changing structure of American agriculture and the importance of this industry to the United States economy.* 1983: 98 p.
Y 4.Ec 8:F 22/3 S/N 052-070-05920-6 2.50

___Trade Policy Perspectives: Setting the Stage for 1985 Agriculture Legislation. *Includes the views and opinions of over 600 people and organizations regarding international agricultural trade.* 1984: 370 p.; ill.
Y 4.Ag 8/3:S.prt.98-263
S/N 052-070-05989-3 8.50

___United States Agriculture's Potential to Supply World Food Markets. *Examines the farm export market and its effect on domestic farm incomes.* 1985: 52 p.; ill.
A 1.107:539 S/N 001-019-00403-7 2.00

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